



<input type="checkbox"/>	Bachelor's thesis
<input checked="" type="checkbox"/>	Master's thesis
<input type="checkbox"/>	Licentiate's thesis
<input type="checkbox"/>	Doctoral dissertation

Subject	Futures Studies	Date	12.01.2021
Authors	Maria Kuusipalo	Number of pages	88+appendices
Title	BUSINESS ECOSYSTEMS Utilizing strategic foresight for gaining insights on how business ecosystems are managed in the future and what challenges they face		
Supervisors	PhD Sanna Ketonen-Oksi and D.Sc. (Econ.) Ville Lauttamäki		

Today, due to increasing interdependence of the world, interest toward understanding business environments and their networks has grown in popularity. A business ecosystem encompasses a company and its business environment on a larger scale than a traditional business environment. However, despite the large amount of research on business ecosystems, information on how they are managed in practise has been quite abstract (Aarikka-Stenroos & Ritala 2017).

The aim of this thesis is to utilize strategic foresight to gain insights on how business ecosystems are managed in the future and what challenges they face. The focus areas of research include strategic aspects and capabilities, challenges, utilization of strategic foresight and scanning trends. In this research, business ecosystems are examined mainly from the perspective of a company in a leading position in the business ecosystem to better understand the cornerstones of management that will be strengthened in the future.

The theoretical structure of this thesis follows an adaptive theory by Layder (1998) where the theoretical and empirical part are combined. The findings from the empirical section have largely influenced the content of the theoretical section. This research is qualitative in nature and the research methods include literature review and theme-based interviews.

This research produced several key findings. Strategic issues such as communicating a shared vision and sharing of information in a strategically profitable way was considered increasingly important in the future. Capabilities such as trust, value creation and possessing dynamic capabilities were emphasized the most. Strategic foresight was considered as an important success factor in the future business ecosystem management because it enables to respond to future challenges and to anticipate changes better. Despite this, it is not yet implemented enough in today's business ecosystems. Challenges that were discovered were mainly related to the strategic aspects and capabilities. Trends that were emphasized the most included increasing ecosystem-based activity, globalization and counterforces, young generations taking management positions and data as a driver.

The main conclusions drawn from this research include that managing business ecosystems in the future requires changing internal structures for creating better practises that help to prepare for future challenges. This requires implementing strategic foresight at the business ecosystem level and understanding its vital and strengthening role in the future.

Key words	Business ecosystem, ecosystem management, strategic foresight
-----------	---





<input type="checkbox"/>	Kandidaatintutkielma
<input checked="" type="checkbox"/>	Pro gradu -tutkielma
<input type="checkbox"/>	Lisensiaatintutkielma
<input type="checkbox"/>	Väitöskirja

Oppiaine	Tulevaisuuden tutkimus	Päivämäärä	12.01.2021
Tekijä	Maria Kuusipalo	Sivumäärä	88+liitteet
Otsikko	BUSINESS ECOSYSTEMS Utilizing strategic foresight for gaining insights on how business ecosystems are managed in the future and what challenges they face		
Ohjaajat	FT Sanna Ketonen-Oksi ja KTT. Ville Lauttamäki		

Nykypäivänä, kiinnostus liiketoimintaympäristöjen ja niissä esiintyvien verkostojen ymmärtämiseen kokonaisuudessaan on lisääntynyt maailmassa sen kasvavan keskinäisen riippuvuuden vuoksi. Liiketoimintaekosysteemi käsittää yrityksen ja sen liiketoimintaympäristön laajemmassa mittakaavassa kuin perinteinen liiketoimintaympäristö. Liiketoimintaekosysteemeistä ja niiden johtamisesta tehdystä laajasta tutkimuksesta huolimatta, tieto niiden johtamisesta käytännössä, on ollut melko abstraktia. (Aarikka-Stenroos & Ritala 2017).

Tämän Pro gradu tutkielman tarkoituksena on strategista ennakointia hyödyntämällä saada näkemystä siitä, miten liiketoimintaekosysteemejä johdetaan tulevaisuudessa ja minkälaisia haasteita niissä kohdataan. Tutkielmassa keskitytään strategisiin näkökohtiin ja kyvykkyyksiin, haasteisiin, strategisen ennakoinnin hyödyntämiseen ja trendeihin. Tässä tutkielmassa liiketoimintaekosysteemejä tarkastellaan lähinnä liiketoimintaekosysteemissä johtavassa asemassa olevan yrityksen kannalta, jotta voitaisiin paremmin ymmärtää niitä johtamisen kulmakiviä, jotka voimistuvat tulevaisuudessa.

Teoreettinen viitekehys perustuu Layderin (1998) adaptiiviseen teoriaan, missä teoreettinen ja empiirinen osuus ovat yhdistetty. Empiirisen osion tulokset ovat suurelta osin vaikuttaneet teoreettisen osuuden sisältöön. Tutkielma on luonteeltaan kvalitatiivinen, jossa menetelminä hyödynnetään kirjallisuuskatsausta ja teemahaastatteluja.

Tutkielma tuotti monenlaisia tuloksia. Strategisista asioista jaetun vision kommunikointi ja tiedon jakaminen strategisesti kannattavalla tavalla pidettiin yhä tärkeäimpinä tulevaisuudessa. Kyvykkyydet kuten luottamus, arvon luonti ja dynaamisten kyvykkyyksien omaaminen korostuivat eniten. Strategista ennakointia pidettiin tärkeänä menestystekijänä tulevaisuuden liiketoimintaekosysteemien johtamisessa, koska se auttaa vastaamaan paremmin tulevaisuuden haasteisiin ja ennakoimaan muutoksia. Tästä huolimatta sitä ei ole vielä toteutettu tarpeeksi nykypäivän liiketoiminta ekosysteemeissä. Haasteet liittyivät pääosin strategisiin puoliin ja kyvykkyyksiin. Trendeistä korostuivat ekosysteemiin pohjautuva toiminta, globalisaatio ja vastavoimat, nuoret sukupolvet johtorooleissa ja tieto ajurina.

Loppupäätelmänä tutkielman perusteella liiketoimintaekosysteemien johtamien tulevaisuudessa vaatii sisäisten rakenteiden muutosta, jotta voidaan luoda parempia keinoja, jotka auttavat vastaamaan tulevaisuuden haasteisiin. Tämä vaatii myös strategisen ennakoinnin toteuttamista liiketoimintaekosysteemi tasolla ja sen tärkeän ja vahvistuvan roolin ymmärtämistä tulevaisuuden kannalta.

Avainsanat	Liiketoimintaekosysteemi, ekosysteemi johtaminen, strateginen ennakointi
------------	--





**UNIVERSITY
OF TURKU**

Turku School of
Economics

BUSINESS ECOSYSTEMS

Utilizing strategic foresight for gaining insights on how business ecosystems are managed in the future and what challenges they face

Master's Thesis
in Futures Studies

Author:
Maria Kuusipalo

Supervisors:
D.Sc. (Econ.) Ville Lauttamäki
Ph.D. Sanna Ketonen-Oksi

12.01.2021
Turku

The originality of this thesis has been checked in accordance with the University of Turku quality assurance system using the Turnitin OriginalityCheck service.

TABLE OF CONTENTS

1	INTRODUCTION.....	7
1.1	Introduction to the topic.....	7
1.2	Research context and its relation to Future studies.....	8
1.3	Research questions and objectives	12
1.4	Conceptual framework.....	13
1.4.1	Definition of key terms	13
1.4.2	The structure of the thesis	14
2	METHODOLOGY AND METHODS	16
2.1	Research approach.....	16
2.2	Research methods	17
2.3	Implementation of the study	18
2.3.1	Literature review	18
2.3.2	The theme interviews.....	20
2.4	Data collection and analysis	22
3	RESULTS: MANAGEMENT OF BUSINESS ECOSYSTEMS.....	24
3.1	Definition of business ecosystems	24
3.2	Key elements of ecosystem management	26
3.3	Architecture.....	28
3.3.1	Roles in business ecosystems	28
3.3.2	Governance aspects.....	30
3.3.3	Vision.....	35
3.4	Relational factors	36
3.4.1	Trust.....	36
3.4.2	Value creation versus value capture	38
3.4.3	Dynamic capabilities.....	39

3.5	Challenges related to ecosystem management	42
4	RESULTS: THE USE OF STRATEGIC FORESIGHT IN BUSINESS ECOSYSTEMS	46
4.1	Strategic foresight -its importance and reasons for practicing it.....	46
4.2	Difficulties and challenges for practicing strategic foresight.....	50
4.3	Networked foresight	52
4.3.1	The use of network foresight in business ecosystems	52
4.3.2	Characteristics of networked foresight	53
4.3.3	Challenges in networked foresight	55
4.3.4	Requirements for successful networked foresight.....	57
4.3.5	Criticism of networked foresight	59
5	RESULTS: NAVIGATING THE FUTURE; DRIVERS OF CHANGE IN BUSINESS ECOSYSTEMS	61
5.1	Adapting changes.....	61
5.2	Counterforces to increased ecosystem-based collaboration and globalization.....	62
5.3	Young generations taking management positions	64
5.4	Data as a driver	65
6	DISCUSSIONS AND CONCLUSIONS.....	68
6.1	Main results	68
6.2	Conclusions.....	74
6.3	Suggestions for future research	76
6.4	Validity of the research	76
6.5	Limitations of the research	78
	REFERENCES.....	80
	APPENDICES	89
	Appendix 1. Futures platform	89
	Appendix 2. Interview format.....	90
	Appendix 3. Description of interview participants	92

LIST OF FIGURES

Figure 1 The structure of the thesis.....	15
Figure 2 The phases in the interview process, based on Hirsjärvi and Hurme (2001) ...	23
Figure 3 Business ecosystem (Moore 1996, 27)	26
Figure 4 Business ecosystem management division (based on Iansiti & Levien 2004) .	28
Figure 5 Model of Organizations as Interpretation Systems (Daft & Weick 1984)	47

1 INTRODUCTION

1.1 Introduction to the topic

Due to enhanced connectivity and interdependency of the world, interest towards understanding wider networks and their interrelationships has increased. Nowadays there has been growing discussion on business ecosystems and ecosystems in general. Business ecosystems are a way to understand the company's business environment in a larger scale that reaches beyond the vertical supply chains and takes a more horizontal and interconnected view. (Iansiti & Levien 2004; Baldwin 2012). Furthermore, increased amount of research has been done to understand the nature of business ecosystems; their complexity and characteristics and how they are managed. Earlier literature takes a more company-centric view and concentrates on the role of a keystone and their strategies, while newer literature highlights the importance of value creation and collaboration and how business ecosystems can be orchestrated when one single firm cannot manage the whole ecosystem alone; it demands collaboration among members of the ecosystem. (Moore 1996; Valkokari et al. 2017). Especially due to their dynamic nature and constant change in the marketplace, companies need to consider how this change and its accelerating pace will impact on their businesses. Moreover, increasing competition and increasing uncertainty have an influence on business activities. Managing business ecosystems challenges companies to change their existing business models into being more dynamic and adaptable. This kind of change is not an easy task especially for an incumbent firm which could require a huge transformation from its current practises. (Bruun-Jensen & Hagel 2015, 91).

Despite the increased amount of research on business ecosystems, information on business ecosystems and its success factors are quite fragmented (Gupta et al. 2018). A remarkable share of the previous research has concentrated on the structure of business ecosystems, characteristics of healthy ecosystems, sustainability aspects and roles of keystones or platforms (Moore 1996; Iansiti & Levien 2004; Gupta et al. 2018). However, articles do not provide any clear or unambiguous answer on how business ecosystems are managed in practise. The academic discussion on the management of business ecosystems has been very abstract; mainly focused on how to orchestrate business ecosystems but few actual mechanisms of how it can be implemented and what capabilities are needed

lack information. More research is essential to gain a more complete picture on business ecosystem management (Aarikka-Stenroos & Ritala 2017, 33). Followed by this, more information is needed on those management aspects that will be highlighted in the future.

The purpose of the thesis is to gain insights how business ecosystems are managed in the future. This thesis aims to find out more on business ecosystem management. The method utilized in this thesis is qualitative in nature. In this way, the study aims at increasing future knowledge in the context of business ecosystem management. This is accomplished by conducting an empirical study to better understand the needed capabilities and strategies. This study focuses also on understanding related challenges and emerging trends. To be able to anticipate these, strategic foresight is used to shed a light on understanding how these aspects can influence on the business ecosystem management in the future.

This thesis is conducted as a commission to Talent Vectia. Talent Vectia is a company in the field of strategic management and consulting, growth strategies, leadership and renewal. Together with its clients, the company aims at creating sustainable growth and well-being for future generations. In doing so, the company works towards creating a better understanding about global challenges that effect on today's and future business and management and it has been interested in market shaping and ecosystems for some time already (Talent Vectia). This research was conducted to strengthen the company's understanding of the management of business ecosystems in the future. During this research, the company has influenced the development of research questions, utilized research methods and the selection of the interview participants.

1.2 Research context and its relation to Future studies

Futures studies is a multidisciplinary field characterized by interdependency, complexity, and uncertainty. It aims at discovering alternative futures to widen the understanding of the world and making anticipations about emerging changes.

“The purposes of futures studies are to discover or invent, examine and evaluate, and propose possible, probable and preferable futures” (Bell 1997, 73).

Being able to anticipate possible and probable emerging changes enhances people's perceptions about the future (Bell 1997, 145). Although, in this thesis the aim is not to

propose alternative images of the future or alternative scenarios, it aims at exploring possible changes that are needed to manage an essential business landscape of the future, namely the business ecosystems. This thesis takes a problem-oriented approach to futures studies by exploring possible changes and challenges and their effect on business ecosystem management in a futures perspective. Malaska (2000, 241) categorizes main futures research areas into three sections; “pragmatical, syntactical and semantical”. These illustrate different focus areas in futures studies. “Pragmatical” has a more organizational focus. Usually it is connected to planning and executing strategies, foresight and organizational aspects. “Syntactical” is mainly focused on futures studies methods. “Semantical” considers mostly wider issues such as global warming that tend to be more context and problem-based issues. Typically, a research can have characteristics from all of them but usually one of them distincts from others as a central focus of the research. It could be said that this thesis has a more pragmatic focus because it utilizes strategic foresight to understand the management aspects of business ecosystems. According to Malaska (2000, 242–243) “knowledge and information” are the formation of three different layers; “the past, present and the future”. Simultaneously, knowledge transforms and develops in all these layers of time. This means that when more information is gained in one layer, more knowledge is developed in other layers at the same time. Derived from this notion, this thesis aims at gaining future related information by gaining more information about the present situations and present literature which widens knowledge about the future. At this way, it also generates insights on the future management aspects that need to be considered in the business ecosystems of the future.

This research looks at business ecosystems mostly from a business ecosystem leader viewpoint to gain insights into what strategic issues and capabilities will be highlighted in the futures perspective and what challenges the company’s business ecosystem environment needs to be prepared for. Additionally, the future is closely related to uncertainty. Therefore, it is important to discuss challenges experienced at the business ecosystem level and possible emerging ones. And here strategic foresight plays an important part to understand these changes. Especially, when considering future related questions, one of the focus areas derives from understanding different trends and drivers of change and their influence on the management of business ecosystems. The trends discussed here are trends that have been identified in both; in the literature review and in the interviews. This thesis will not take the role of a public sector in influencing business

ecosystems into a consideration. This is due to time related restrictions; the focus of the thesis would have become too wide. Furthermore, this research is not focused on any specific industry, but on business ecosystems in general. The business ecosystem perspective reflects the ever-growing complexity of networks that companies are facing today and in the future. Business ecosystems can be described as consisting of several different kinds of networks and interactions between ecosystem members. The emphasized firm centric approach allows to evaluate what the concept of business ecosystem means to a company and its management.

Moreover, by utilizing strategic foresight in the context of business ecosystems, this research aims at providing insights about possible changes that may emerge in the future. This broader view of the surrounding environment helps companies to be able to scan their environment more holistically, which enhances their strategic foresight processes. Typically, futures studies can take several time perspectives. Masini (1993, 31–32) defines these time perspectives into three categories. The first one is related to scanning the future “from the present to five years”, the second “from five to ten years” and the last “from twenty to fifty years”. By categorizing time perspectives in this way, it brings more clarification on aspects that are generally viewed in a shorter time frame and aspects that already from the beginning need to be scanned in a longer time frame, such as issues related to global sustainability. The shorter the time perspective is, the easier it is for people to plan it and picture it for what it entails. As the time perspective expands and reaches beyond the five years perspective, it holds more challenges and uncertainty which makes it more complicated to think of and make plans for the longer time period. Masini (1993, 31) emphasizes that the purpose of futures studies is to think ahead more than is traditionally practised. In this way, people can gain the leverage they need when thinking against the unknown. When choosing the most suitable time perspective in futures studies, the most notable aspect is to choose the time horizon that can best provide answers to a specific research. More specifically, the stated time perspective depends on the subject in question and its objectives (Masini 1993, 32; Brier 2005, 842). In this thesis the planned time frame reaches to 2030. This time horizon is expected best to deliver answers to the research questions. Additionally, a time horizon, which takes a five to ten years perspective, is quite common in an organizational context. Especially, this time horizon allows companies to detect rapid changes better. Therefore, this time horizon was also considered suitable in this research. Strategic foresight, which is an essential part of futures studies implemented in an organizational context, connects this thesis into the

futures studies field. Strategic foresight provides “insights” about the futures (Rohrbeck et al. 2015, 4; Vecchiato 2015, 26) and understanding towards changes. Via strategic foresight, companies can envision alternative futures and plan for ways to respond to changes. A term “corporate foresight” comes from words corporate which reflects organizational environment and foresight which relates to definitions on many futures instead of one, level of uncertainty, understanding drivers of change and discovering alternatives for impacting the future (Rohrbeck et al. 2015, 2). A word “corporate” is used instead of “strategic” mainly to clarify that corporate foresight is strategic foresight in a company context (Rohrbeck et al. 2015, 5; Vecchiato 2015, 26; Rohrbeck & Schwarz 2013, 1596; Rohrbeck & Bade 2012, 3). In this thesis strategic foresight is the used term because it illustrates more the wider business environment that is typical for the business ecosystem.

Furthermore, strategic foresight is also related to a term “Memories of the future” which relates to individuals’ ability to envision alternative courses of action and anticipate their possible, probable and preferable trajectories. In a business context this term is related to “organizational memory” which covers all knowledge within a company that it can use for anticipating future events better. It enables companies to anticipate signs of change and enables people within an organization to impact activities of other people. Strategic foresight helps companies build images on alternative futures, which help companies better identify the changes they need to make. (Vecchiato 2015, 30). Being able to build and manage, in other words “navigate” ecosystems, demands that managers can use “strategic thinking” skills. (Zahra & Nambisan 2012, 219). “Foresight and insight” are important elements in strategic thinking. By using foresight, it is possible to scan the future and realize changes before they occur. Insight is about uncovering the deeper meaning about the future. Insight effects on how companies can change their current dynamics and use their creativity. This also includes rethinking the boundaries of the company and challenging their existing practises. These abilities change the way how companies see their business environment and possibly change their current assumptions about their current markets and business partners. This again impacts what companies think of their business environment should consist of, which can possibly change the existing links in the company’s business ecosystem. Rethinking relationships can offer the company a chance to operate in a new business environment. To be able to prosper in the future, companies need relationships. And this success highly depends on realizing those limits and restrictions within one’s business ecosystem and being able to alter those

restrictions into value creating activities. To understand and know how to act when faced with new situations is the essence in future thinking. (Zahra & Nambisan 2012, 220).

1.3 Research questions and objectives

Main research question: How are business ecosystems managed in the future?

Sub research questions:

1. What kinds of strategies and capabilities are needed? What do companies that are familiar with business ecosystem management do?
2. What challenges can be found in business ecosystem management?
3. How do companies implement strategic foresight in the ecosystem level?
4. What kinds of trends and drivers of change can be detected and what kinds of requirements will they pose to the management of business ecosystems in the next 10 years?

Research objectives:

The stated research objectives are planned to provide more clarification on the expected outcome of the sub research questions. These include the following:

To bring forth those strategies and capabilities that are needed in business ecosystems management in the future. The emphasis is on aspects that emerge through the research process.

To understand challenges experienced in business ecosystems and challenges experienced in a strategic foresight level.

To understand the role of strategic foresight in business ecosystems and its possible increasing effect in the future.

To understand what kinds of changes can be detected and how an organization's activities need to be changed to better respond to these challenges.

By responding to these research questions, this thesis aims at gaining insights on business ecosystem management in the future. The literature on ecosystems constructs a base for providing answers to a sub research question on capabilities and strategies. With the help of strategic foresight, the thesis aims at getting responses to sub research questions on challenges and how strategic foresight is utilized in business ecosystems to understand the role of strategic foresight in business ecosystems and its possible increasing effect in the future. This also contributes to responding to the sub research question on trends because it allows to scan changes in a company's business environment. All the sub research questions are also supported by insights gained from the interviews.

The sub research questions are discussed in chapters three, four and five. The sub research question on strategies and capabilities is mainly discussed in chapter three. The sub research question on challenges is discussed mainly in chapters three and four. The sub research question on strategic foresight aspects is discussed in chapter four. The sub research question on trends is discussed in chapter five. These chapters also provide initial findings of the study. However, these findings are discussed in more detail in chapter six that provides an overview of the main findings and answers the main research question of the study.

1.4 Conceptual framework

1.4.1 Definition of key terms

Key terms are defined to provide clarification on how these terms should be understood in this context and define their connection to the subject. It is important to provide clarification on how the term "business ecosystem" is defined here, due to a lack of consensus among different ecosystem terms. Usually, researchers have used different ecosystem terms interchangeably which has prevented the formation of clear understanding on the terms. For instance, researchers have written on innovation ecosystems, which are more related to new product developments and innovations and referring those either as business ecosystems or as innovation ecosystems. This has caused misinterpretations in the current literature. (Scaringella & Radziwon, 2018, 63). Therefore, to reduce confusion and complexity, the used terms and their relation to this context need be explained.

Business ecosystem: a business ecosystem is an entity of collaboration networks (that are both competitive and co-operative) which supports a company's strategic goals and is based on a dialogue between different partners and produces systemic effects in these networks.

Strategic foresight: "Corporate Foresight is identifying, observing and interpreting factors that induce change, determining possible organization-specific implications, and triggering appropriate organizational responses. Corporate foresight involves multiple stakeholders and creates value through providing access to critical resources ahead of competition, preparing the organization for change, and permitting the organization to steer proactively towards a desired future" (Rohrbeck et al. 2015, 2).

Management: refers to how management is understood in business ecosystems and aspects expected from a business ecosystem leader to manage and orchestrate ecosystems.

Capabilities: include trust, value creation and dynamic capabilities. In this thesis they represent the most essential capabilities needed in managing business ecosystems in the future.

Strategies: relates to the architecture of a business ecosystem. It includes roles, standards and other strategic aspects of business ecosystems.

Trends: a general development or change that can be detected as having impact on business ecosystem management

Drivers of change: internal or external factors in a company's business ecosystem environment that give rise to changes

1.4.2 The structure of the thesis

Figure 1 reflects how this study arrived from the stated research questions to conclusions. It starts from the reviewed literature. After that an empirical part of the thesis was conducted that influenced the chosen literature. Together they form a dialogue that serves

as a theoretical framework for this thesis. Finally, it leads to the evaluation and analysis of the research findings.

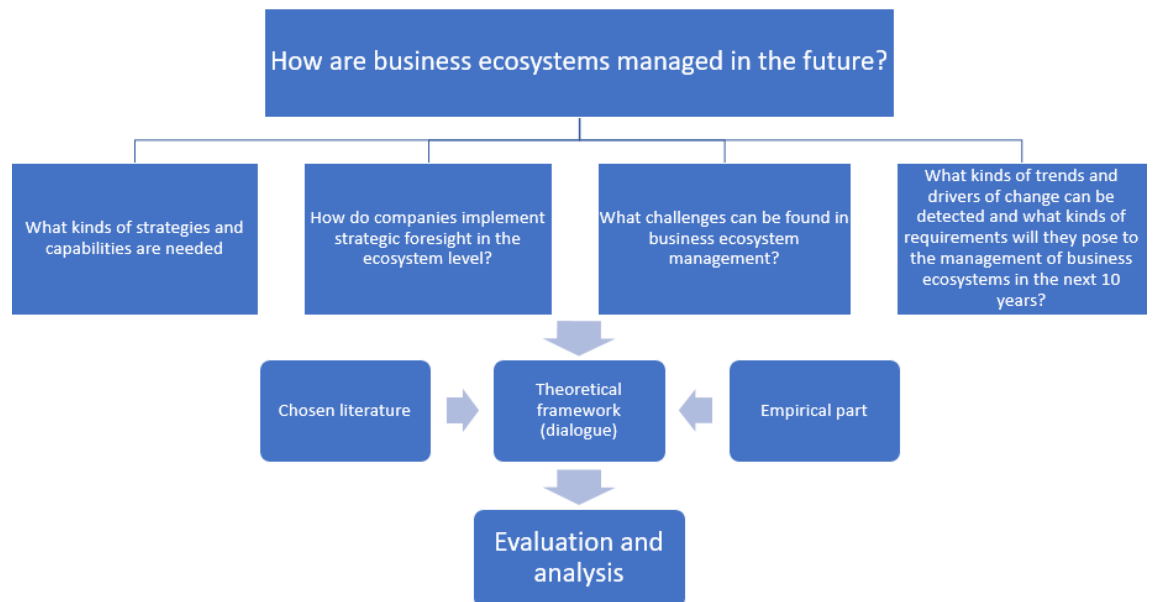


Figure 1 The structure of the thesis

2 METHODOLOGY AND METHODS

2.1 Research approach

This thesis takes a critical realism approach. The critical realism research is based on a belief about the existence of an objective world but where people's perceptions of that world are based on their personal experiences. Critical realists acknowledge that this subjectivity must be considered when conducting a research. Critical realism approach assumes that people's reality consists of three levels. These are "experiences", "events" and "mechanisms". More specifically, it means that people's "experiences" reflect their personal views of how they understand and interpret situations that take place around them. "Events" are the actual situations that take place in their environments which are understood through experiences. "Mechanisms" take place in a deeper level of reality and are the reasons why situations take place the way they do and give rise to the events. In critical realism there is an assumption that influencing the mechanisms, it is possible to influence the trajectory of changes in society. (Fisher 2010, 261–262). The theoretical framework of the thesis is based on an "adaptive theory" by Layder (1998). In an adaptive theory the results of the empirical part form a significant part of the theory. It is both "deductive" and "inductive" in nature. First, the theory is developed to form a base for an empirical research. Secondly, empirical results gathered from specific observations are translated into generalisable findings. These results affect the final content of the theory. It is more like a dialogue between the theory and the empirical findings that together generate answers to research questions and support each other. (Layder 1998). Although the aim of this study was not to create a new theory, the adaptive theory of Layder provided guidance which helped to structure this study. In this study literature review was conducted first. After conducting the literature review, theme-based interviews were conducted. After completing the theme interviews the focus was directed back to the literature review which together formed the content of the theory and the empirical section of this study. In the conclusions section these are combined to illustrate the desired dialogue between the theory and the empirical part.

2.2 Research methods

This thesis follows a qualitative research method. Usually, a qualitative method is chosen when the subject of the research is unknown, or the researcher wants to explore some new phenomenon. The qualitative method is considered as a suitable method when the researcher does not know beforehand what kinds of answers emerge from the research. Subjects in qualitative methods tend to be complex in nature. In contrast, a quantitative method is used when the subject is more known, and it is easier to make pre assumptions on research findings. This means that the researcher can use more structured research methods for analysing the results. (Fisher 2010, 169, 174, 181). In this thesis the empirical part is twofold. In the first phase a literature review was conducted. The literature review served as the basis for the entire study. Additionally, a trend map that was created in Futures Platform was based on the literature review. In this research the trend map was used to illustrate trends that possibly influence on the management of business ecosystems in the future by 2030. More specifically, it was used as a tool for collecting trends that helped to structure the information gathered from different sources. The Futures Platform is an online tool for creating a trend radar which helps analyse what trends might shape the future and analyse their likely impact (About Futures Platform 2019). This method will be explained more in the implementation of the study sub chapter.

In the second phase semi-structured interviews were conducted. More specifically in this study these represented theme interviews. The empirical part follows a cross-sectional research design where each interviewee is interviewed on a one-time basis. Hirsjärvi and Hurme (2001) list some pros and cons related to the theme interviews. As a result of this, a semi-structured interview as a method is considered suitable if the research problem is complex in nature and if the research problem can be expected to produce responses that reflect different perspectives. However, the downsides of the interviews are related to the analysis of the theme interviews, more specifically to the interpretation and reporting of the interviews. These phases are often problematic due to there are no ready-made structures on how they should be conducted, and a lot depends on how the researcher interprets the material. (Hirsjärvi & Hurme 2001, 35). These reasons explicate why this method was chosen and connect this method to the research context. Therefore, data collection and analysis are also described in detail to strengthen the validity of this research and these are described in the data collection and analysis chapter. A theme

interview was chosen because of the complexity of the topic in question. The data analysis and interpretation phase follow mainly guidelines represented by Hirsjärvi and Hurme (2001). Especially, the relevance of the theme interview and its characteristics are explained briefly because those guidelines were utilized when analysing research results. A theme interview, in other words, a semi structured interview differs from other types of interviews. Usually, in theme interviews interviewees are familiar with the subject and a researcher has also previous knowledge on the subject from where the researcher formulates themes for the interviews. These themes form an interview frame. The interview itself always reflects on the subjective experiences of interviewees. Additionally, interview answers always reflect the presence of the interviewers and their way of asking questions. Theme interviews allow more freedom to discuss about the subject. It allows the researcher to modify interview questions according to a situation because in theme interviews same questions do not need to be asked from each participant. Although questions might partly alter to some extent and the order can change, the main themes and questions remain the same. Furthermore, recording of interviews is a common practise in theme interviews. This was also done in this research because it allowed for more detailed information gathering. (Hirsjärvi & Hurme 2001, 47–49, 92).

2.3 Implementation of the study

2.3.1 Literature review

In this thesis Volter database was the mainly used search service because it allowed access to several databases and articles. From a large part the utilized literature was based on peer-reviewed international scientific articles. By narrowing down the search on business ecosystems and management to newer articles, the aim was to gain more future related information. Therefore, the articles that deal with the ecosystem concept are mainly from 2017. A few of the articles were also conference publications because this allowed access to the latest issues. Despite this, no specific year-bound criterion was used in the search. Older literature was used to gain a basic understanding about the subject. These were books found at the library of Turku School of Economics. With keywords strategic foresight and business ecosystems a connection to networked foresight was found. Trends were scanned from different Internet sources. This allowed me to get acquainted with

issues dealing with current and future topics. The literature review consists of ecosystem literature, especially in the field of business ecosystems and management. The literature review also includes strategic foresight, foresight in ecosystems, networked foresight and anticipating drivers of change. Themes discussed in this thesis are based on the viewed literature and results gained from the interviews. The literature review is structured in a way that theoretical and empirical parts support each other. Since newest articles are more focused on innovation and platform ecosystems than business ecosystems, the literature used here combines innovation, platform and business ecosystem literature to better understand the future of business ecosystem management and to generate more future related information. Additionally, earlier literature has also combined these together, when interpreting views on the ecosystem subject (Järvi & Kortelainen 2017, 6). Strategic foresight encompasses the second part of the thesis. Themes discussed on strategic foresight include its importance to companies, reasons for practising strategic foresight and how it is implemented in companies. This thesis considers networked foresight due to its close relation to ecosystem literature and it provides insights on how strategic foresight can be implemented in business ecosystems. Furthermore, articles on strategic foresight in business ecosystems are quite scarce, especially, the kinds of articles where a research focuses on how strategic foresight activities are implemented in business ecosystems. Lastly, literature review includes general information on anticipating changes and how trends are scanned in ecosystems. Special interest is given to the trends highlighted during the interviews.

The Futures Platform is a tool developed for companies which helps them scan the future better. The tool offers individuals a possibility to create their own trend radar which helps them become more familiarized with different phenomena and understand future changes better. The Futures Platform contains numerous trends which are supported by several articles from numerous channels. The phenomena are checked regularly to keep the information on trends up to date. In this way, it can provide more reliable future related information. (About Futures Platform 2019). When creating one's own trend radar, it is possible to utilize trends that are described on the website, but it is also possible to add one's own descriptions. The trend radar created for this thesis can be found in the appendix 1. The trend radar is created by the researcher of this thesis and it is made on the Futures platform website. The trend radar created for this thesis is divided into four themes. These themes are global environment, changes in the Finnish society, management practises and competences, and new organizational strategies. It is based on

the reviewed literature and the selected trends on the radar represent those phenomena that could possibly influence the business ecosystem management in the future. It was sent together with the research topic and research questions beforehand to all interview participants. This allowed them to scan the material through beforehand and get an overall description of the topic. The method was mainly used as a grounding aid for the following interviews. It acted as a support tool for interviewees that they could utilize when they were asked about trends that may influence on management aspects in business ecosystems by 2030. Also, short descriptions were provided on each of the trends in the radar to clarify their meaning. The radar created for this thesis contains a variety of trends, because it was considered important that the research would not limit the interview participants to a certain paradigm, which could have happened if a smaller number of trends had been selected in the radar. The pre-sent material was followed by semi-structured interviews where part of the interview time was directed towards discussion on trends to find out what trends the interview participants considered to be most meaningful in this context. Usually, the trends were closely related to the field of business of the interview participants or to their field of their expertise. If the interview participants were not familiar with the presented material, they were asked about trends, which may have an impact on the future of the (business) ecosystem, reflecting their own industry and expertise. The word business is in brackets because sometimes it was easier to talk about ecosystems in more general terms and some interview participants reflected their views considering more innovation ecosystems which is a broader term than a business ecosystem. Also, an innovation ecosystem view is not focused on one company, instead it is more interested in how new innovations are developed when several companies, universities and public sectors are collaborating (Valkokari et al. 2017).

2.3.2 The theme interviews

All interviews were conducted in February 2020. Semi-structured interviews were chosen because they allow more freedom to participants to talk about their own views more openly. Interview questions were more guiding questions, because the idea was to let the interview participants talk freely. Purposive sampling was used, when selecting the interview participants to the interview. It is a sampling method utilized in a qualitative study when the participants consist of a small-scale sample. The choice of participants is based on a researcher's own experiment and intuition. Participants represent individuals

who best meet the criteria and can provide insights to a research problem (Saunders & Lewis 2012, 138). In this research there were eight interviews all together. However, the total number of the interview participants was nine, because there were two interview participants in one of the interviews. Three of the interview participants included scientists and professors who have specialization in ecosystems, marketing and strategy. Six of the interview participants included representatives from internationally known Finnish companies and innovation ecosystems. The company representatives are working in different management positions in their companies. The description of the interview participants can be found in the appendix 3. In this study the citations of the interview participants are described by numbers from one to nine which represent different individuals. The chosen interview participants were familiar with the subject and represent individuals who understand the concept of ecosystem. The interview participants included individuals who have been either working in different kinds of ecosystems, for example, taken part in different ecosystem-based development projects or conducted research on ecosystems. This previous knowledge contributed to their selection for this research. And by involving companies from different business fields, more versatile views were expected to gain on the subject. Therefore, expectations were that they could provide better future related information on business ecosystem management and provide well-grounded answers to the research questions to fulfil the research objectives. A pre-planned question format was used to guide the interview process. The interview themes addressed the ways of managing business ecosystems, changes and requirements in 2030, the role of strategic foresight when evaluating changes in management aspects and possible challenges experienced in ecosystems. The interview format can be found in the appendix 2. As it can be seen, the interview format includes a variety of different questions and the questions asked depended on the interviewee and the situation itself because each interview was different. Additionally, the interview participants' own specialization influenced what questions were considered most important to ask. The time span for interviews was one hour and information received during that time acted as an information base for the data analysis and interpretation. The interviews were held either face to face or online. The interview took place in Finnish, but due to the language of this thesis, the citations were translated in English. When translating the answers of the interview participants, the aim was to keep them as original as possible.

2.4 Data collection and analysis

After interviews were completed, the analysis of results took place. Usually, it is not necessary to analyse all the data from the interviews (Hirsjärvi & Hurme 2001, 135). The themes discussed in this thesis were selected based on their relevance to the research questions. Additionally, other interesting insights that emerged regarding business ecosystem management aspects were also added as themes. All interviews were tape recorded and the first phase of analysis was to listen each interview through twice going back and forward with the records to ensure a completion of a full transcript of the interviews. After completing the transcripts, they were read carefully through several times to identify those themes that stood out the most among the interview participants. After that, the similar themes of all interview participants were combined. During this time some of the themes were also combined because they included similar ideas. This also reduced the total number of the themes. Next, main themes were chosen to form a dialogue with the theoretical part. This was done by comparing them to a previous literature review to find out those themes that stood out and seemed to be influencing business ecosystem management the most. The interview answers were analysed and reflected on the literature review and research questions to define what kinds of insights had emerged. The expected outcome of the interviews was to gain better understanding about the emerging phenomena and thoughts regarding the future aspects of the business ecosystem management. The interview responses also influenced the literature that this thesis should be focused on. Finally, the whole study was reflected against the research questions in order to find out the emerging insights. The findings of the study are discussed through three different themes in the following chapters of this study. Figure 2 illustrates the main phases of the interview process. It is based on a figure created by Hirsjärvi and Hurme (2001, 144), but it is modified to better illustrate the interview process conducted in this thesis.

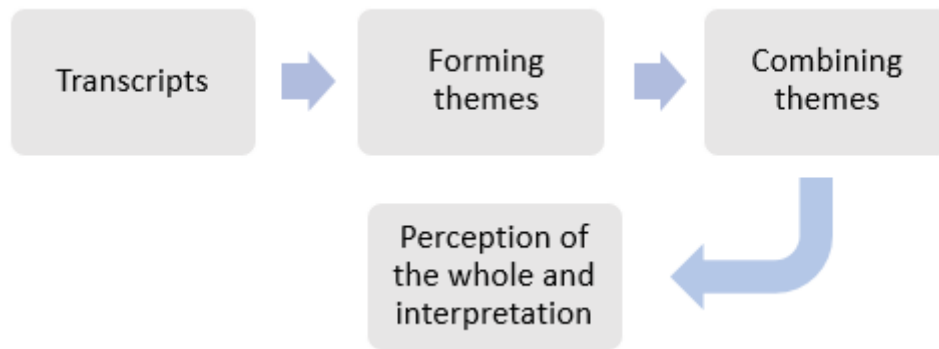


Figure 2 The phases in the interview process, based on Hirsjärvi and Hurme (2001)

3 RESULTS: MANAGEMENT OF BUSINESS ECOSYSTEMS

3.1 Definition of business ecosystems

According to Moore a business ecosystem is

“An economic community supported by a foundation of interacting organizations and individuals – the organisms of the business world...Those companies holding leadership roles may change over time, but the function of ecosystem leader is valued by the community because it enables members to move toward shared visions to align their investments, and to find mutually supportive roles” (Moore, 1996, 26).

Adner (2017, 56) views ecosystems in a slightly different way, where the focus is on the delivered value and only those parties, that are considered as essential for a value to become materialized, form the ecosystem. Weber and Hine (2015, 31) criticize earlier business ecosystem literature by stating that there is a lack of overall understanding of business ecosystems. This absence has been said to be one reason for confusion, for example, what can be classified as a business ecosystem and what roles exist. Overall, there are many different definitions describing business ecosystems, which makes it complicated to understand in full. Despite this, it is important for companies to understand their own business ecosystem and its members to ensure a successful and continued collaboration among different parties. It helps them scan their environment better and recognize emerging interrelationships. (Weber & Hine 2015, 32).

Sometimes, business ecosystems are also referred to as “networks” or “strategic nets” (Zahra & Nambisan 2012; Möller & Halinen 2017). Zahra and Nambisan (2012, 220) refer to business ecosystems as being the outcome of a long development that defines the interactions between the actors. However, it should be noted that differences between business ecosystems and networks are that ecosystems are more open, and participants can change more often, and they are more focused on value creation (Lehtonen 2017, 52). The main distinction between networks and business ecosystems is that members of ecosystems form wider networks where more actors are involved (Valkokari 2015, 19). Networks are based on dyadic relations whereas ecosystems relationships are based on triadic relations (Shipilov & Gawer 2019, 22; Adner 2017, 49). In their article Shipilov

and Gawer (2019) analyse similarities and differences between networks and ecosystems in order to bring clarity to the increasing discussion on ecosystems and whether they bring new value to existing network studies. According to them, similarities include their systemic nature, interdependency and ability to “adapt” and “shape” the business environment. Main distinctions include that networks are based on market prices whereas ecosystems are based on abilities to manage companies that are not directly under anyone’s control. (Shipilov & Gawer 2019, 7–9) Additionally, in ecosystems participants are essential enablers that ensure that a planned product becomes materialized and utilized by an end customer without a need for a formalized alliance that is common for networks. (Shipilov & Gawer 2019, 10). Shipilov and Gawer (2019, 3) also provide explanations on why these two should not be thought as similar by stating that ecosystems should be thought as consisting of players that cannot be controlled completely whereas networks can be considered as having a more structured and strategic format. Shipilov and Gawer (2019, 4) argue that previous researchers have focused on ecosystems more as a metaphor of existing networks than solely in its own distinctive term and a modern understanding on ecosystem definition should consider ecosystems as actors who should work cooperatively to deliver the “focal offer” in other words a planned product or a service. These opinions are in line with Adner (see Adner 2017) because they criticize the usage of the ecosystem term and argue that ecosystem has become more like a trend word that is used to describe today’s organizations (Shipilov & Gawer 2019, 6). Seppänen et al. (2015, 2) bring forth another angle by stating that instead of acting towards common goals, ecosystem actors work together to achieve their individual objectives and these ecosystems cannot be managed from above. Despite the angle, these show that in ecosystems the importance of network effect is crucial. A few interview participants expressed this complexity in following terms:

“Defining ecosystem is complex, it is defined differently depending on who determines it” (1)

“Networks have different goals than ecosystems. In Finland ecosystem thinking is difficult...Then there is one basic problem when people confuse together ecosystems and networks, from the beginning of time there have been subcontractors which is a totally different thing than ecosystems, that really there would be common goals and I think that too little is often spent time on what we as an ecosystem are aiming to achieve, that it

would be understood that we have common goals and we could use this multiplier effect to accelerate this. If every network has different goals and the aim is to maximize one's own sales, then it is not an ecosystem" (4)

Figure 3 brings more clarification on how a business ecosystem is usually defined and understood. According to Moore (1996, 27) business ecosystems consist of three layers that are "core business", "extended enterprise" and "business ecosystem". The first relates to the organization's direct network consisting of its closest suppliers, closest retail or distribution chains and main contributors. The second layer takes a larger set of suppliers and customers into consideration. The latter layer encompasses the whole business ecosystem. In addition to the previous layers, it takes the role of the government and wider set of stakeholders into account.

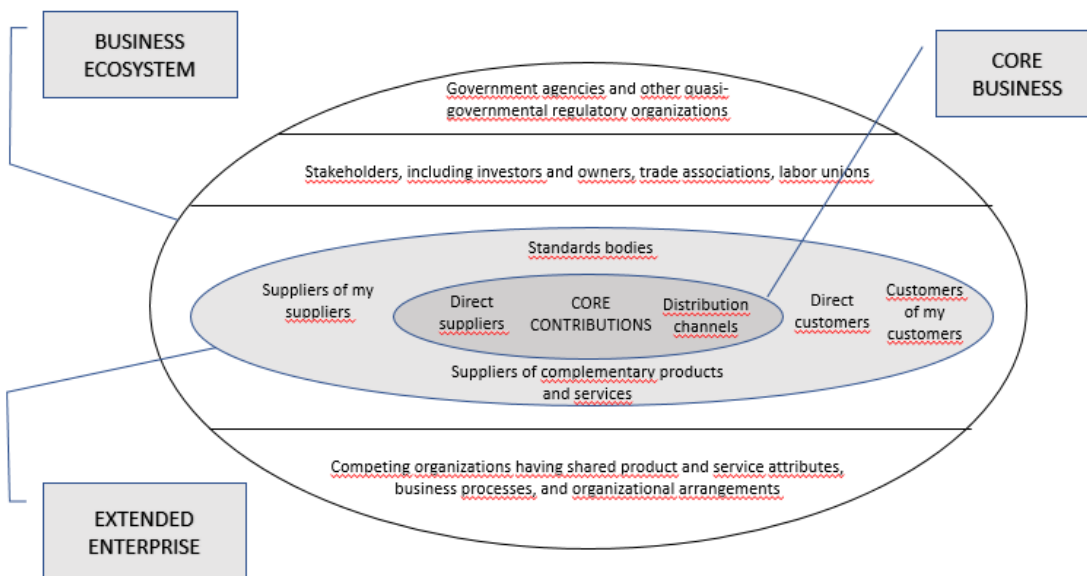


Figure 3 Business ecosystem (Moore 1996, 27)

3.2 Key elements of ecosystem management

In academic literature, "ecosystem management" usually refers to two main themes: the construction of ecosystems and the management of ecosystems (Valkokari et al. 2017, 14). Management in business ecosystems has been a subject of discussion in the ecosystem literature for quite a long time. For instance, earlier literature describes that

business ecosystems are built around a focal actor, a hub or a keystone (Moore 1996; Iansiti and Levien 2004). This is in line with Teece (2017, 9) who argues that the ecosystem must have a leader that provides guidelines that others can follow. This is to make sure that everyone knows their positions and roles. In contrast, newer literature emphasizes that ecosystems cannot be managed by a single firm, instead they are said to be self-evolving, dynamic and built on a mutual value base (Craca & Camarinha-Matos, 2017). However, a dilemma whether they can be managed or not, is more related to how the concept of ecosystem is described and depends on the area of focus. Since the ecosystem management literature is blurry and scattered, the description of the concept mostly depends on what literature sources have been used and how the term is illustrated (Aarikka-Stenroos & Ritala 2017, 32). And even though keystones are said to be the ones that can manage ecosystems, it should be noted that their role is described more like an orchestrator in several articles that focuses on setting a common vision and guidelines rather than strict rules (Valkokari et al. 2017). Möller and Halinen (2017, 19) state that there are six most important tasks for managing ecosystems that include communicating a vision and detecting changes in the environment, careful selection of members and an ability to keep them in the ecosystem, taking care of the governance aspects such as ensuring integrated information process across the ecosystem, ensuring that value is delivered through the whole ecosystem, ensuring that ecosystem functions according to set standards and delivers value to end customers, and finally finding ways for evaluating current partners to spot if and when it is time to make changes, for example, to acquire new members.

In this thesis business ecosystem management is divided into three sections. These include architecture, relational factors and environmental factors. This division is based on Iansiti and Levien (2004) who divide the most important determinants of a business ecosystem into three categories. These are “architecture”, “integration” and “market management” (Iansiti & Levien 2004, 145). Here the original division is modified to suit the needs and objectives of the thesis better. A decision to place capabilities under the concept of relational factors is based on an article of Planko et al. (2017). The article served as a source of inspiration to group capabilities under a common theme. Figure four illustrates this division.

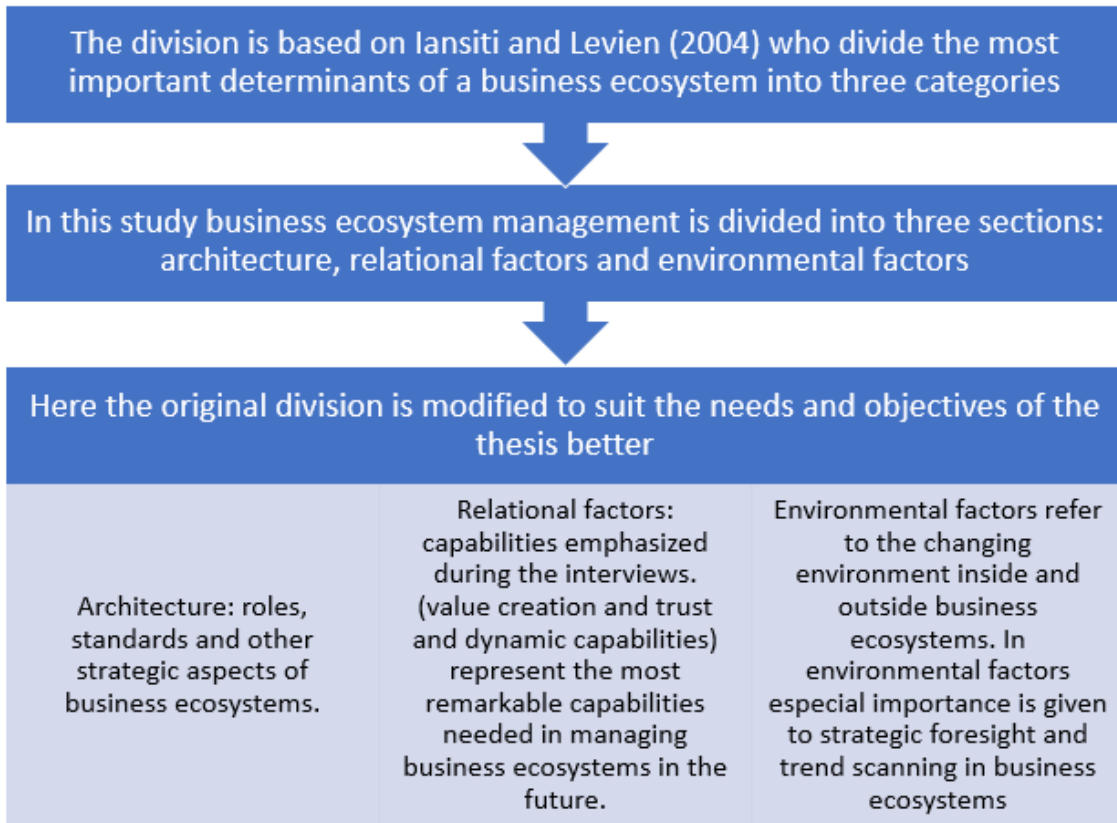


Figure 4 Business ecosystem management division (based on Iansiti & Levien 2004)

In this research architecture includes roles, standards and other strategic aspects of business ecosystems. Relational factors represent those capabilities that were emphasized during the interviews. These include trust, value creation and dynamic capabilities. These represent the most remarkable capabilities that are needed in managing business ecosystems in the future. Finally, environmental factors refer to the changing environment inside and outside business ecosystems. In environmental factors special importance is given to strategic foresight and trend scanning in business ecosystems.

3.3 Architecture

3.3.1 Roles in business ecosystems

In order to clarify the structure of business ecosystems, it is noteworthy to mention different business ecosystem roles and their functions. Usually, there is a keystone, the leader of the ecosystem, that concentrates on managing wider aspects and ensuring that other players are working according to set values. Other partners have been described a

bit differently depending on the literature source used. Division of roles in a business ecosystem is made between “keystone”, “dominator”, and “niche” (Iansiti & Levien 2004, 68; Seppänen et al. 2015, 2). These roles are said to describe different strategies within a business ecosystem. A choice of a business ecosystem strategy is affected by firms’ intentions, strategic thinking, and their current position in an ecosystem. (Iansiti & Levien 2004, 68). Keystones influence the performance of the business ecosystem in several ways; to retain the ecosystem’s balance, heterogeneity and productivity. Keystones are said to be essential players in a business ecosystem. Especially, in an environment characterized by external “disruption”, keystones can contribute to the survival of other players by providing them support and maintaining a balance and ensuring the performance of all members. One of the key tasks of keystones is to focus on attracting new niche players in order to enhance innovation within a business ecosystem (Iansiti & Levien 2004, 69–71, 91).

“Dominators” are said to be companies that wish to own and control a remarkable part of the ecosystem. They differ from keystones in their way of capturing and creating the most value by themselves. Sometimes they can cause detrimental effects on the overall performance of the business ecosystem because they are said to be limiting its versatility because they want to excess too much control. (Iansiti & Levien 2004, 72). Even though dominators and keystones excess power within a business ecosystem, dominators are the ones that do not consider how the end value will be divided and are more concerned on getting the largest share for themselves. However, this does not mean that keystones share and create value for their business ecosystem simply for purely selfless reasons. Their end goal is improving their own performance and reciprocally this means supporting the performance of other players to achieve this goal. (Iansiti & Levien, 2004). Furthermore, niche players contribute to the business ecosystem by bringing specialization, new knowledge and versatility. Niche players utilize resources and support that a keystone provides them (Iansiti & Levien 2004, 76–77). Niche players are also labelled as specialized and important players. They also can influence the nature of the business ecosystem where they belong by utilizing their own leverage. This means that niche players can leave the business ecosystem if they have dissimilar interest with the business ecosystem leader, or if these leaders are excessing too much control over them. This is also niche players’ way to excess their own power over other players. (Iansiti & Levien 2004, 138–140).

In ecosystems players are dependent on other players for success. This dependency is called as “diffuse co-evolution” where ecosystem players work together and are influenced by their mutual interdependence (Weber & Hine 2015). More specifically, a “co-evolutionary logic” in ecosystems refers to evaluating present and future trajectories from the viewpoint of all ecosystem members that evolve together through synergy. This term relates to expanding one’s idea of a business environment towards a more systematic way of understanding networks. It means considering management aspects from a wider perspective and considering future aspects by evaluating how cooperative relationships may evolve in time. (Aarikka-Stenroos & Ritala 2017, 25, 31). The essence of co-evolutionary logic is that companies evolve in respect to other players and the environment and vice versa (Porter, 2006).

In their article Annanperä et al. (2016) examine companies’ roles within a business ecosystem. The results reveal that business ecosystem roles are not always constant and can change over time. For example, one company may start as a leader, but it may become displaced by another company that is considered as being more valuable, for example, in terms of resources that it can provide in the business ecosystem. Valkokari et al. (2017, 21) state that roles can be “seen as hybrids” which strengthens the view that roles in ecosystems can change. Similar ideas of the possibility of having different roles are provided by other researchers. (cf. Iansiti and Levien 2004, 104; Aarikka-Stenroos & Ritala 2017, 35–37). Additionally, Adner (2017, 48, 50) brings forth the possibility that ecosystem management does not have to fall on one single firm, instead it can be shared, and it is open to debate. This was not discussed with all the interview participants. With those whom this discussion took place, opinions regarding the possibility of shared management were quite polarized.

3.3.2 Governance aspects

Adner (2017, 43–44) criticises earlier literature on ecosystem management by being too concentrated on a focal firm and its surrounding companies where the focus has been more actor-based than activities based. He introduces a “structural approach” to ecosystem thinking which differs from earlier literature by highlighting the importance of “value proposition”. The thought behind this, is that value proposition should act as a starting point to the ecosystem development where companies should start thinking ecosystems by putting their expected value proposition first and deciding the expected

value that the ecosystem can deliver to its customers. Only after this, companies could start thinking about those actors that should be involved in the process. In this way, the ecosystem could best deliver the expected value when actors are chosen according to a certain need, instead of choosing partners from their traditional networks. This follows that keystones should come up with an ecosystem strategy that helps them to orchestrate also members of the ecosystem to whom the keystone company has no direct ties. This is said to be an aspect that separates an ecosystem strategy from other management strategies. (Adner 2017). This distinction is due to that business ecosystems are referred to as “N-sided markets”. Typically, these kinds of markets are more complicated and more sensible towards changes. N-sided-markets refer to business ecosystem relationships that take place between multiple parties. (Iansiti & Levien 2004, 195). According to Adner (2017, 48–49), the most critical task of management is to select the most appropriate members with the right capabilities. It also implies that management should make collaboration between different partners clearer. This requires defining what activities different ecosystem partners are expected to implement and maintaining relationships. Adner (2017) also emphasizes the keystone’s ability to manage competition both inside and outside of the ecosystem. Furthermore, managing requires understanding about how to create, change and orchestrate ecosystems. Keystones are said to be responsible for avoiding tensions between different members and making necessary changes, for example, deciding about access rules and how cooperation between members is created and maintained. (Helfat & Raubitchek 2018). Below there are a few citations that illustrate how the interview participants picture the position and responsibilities of leading firms in the future:

“There must be clear rules and management models, must have the ability to take into account, for example, departing members and new entrants, there must be a way out from collaboration and accordingly, take new ones into the ecosystem, continuous look for forward” (1)

“There has to be a clearly defined value proposition, redeem that why me, quite sensitively to listen feedback and if something is not working, then to be responsive and correct those things.” (4)

” Bridging the gap: gap between ecosystem goals and company’s current business goals. ...It would have been thought through that this is the closed area, but these are the things that we are ready to discuss and bring to the common agenda. Clear operating models in the company's strategy and clear decisions on information sharing to outsiders and ability to identify boundary conditions and one’s own settings within we are really prepared to work together more” (7)

When planning for their business ecosystem strategies, companies need to take a slightly different approach compared to traditional organizational strategies. Companies should first consider their own company level strategy and how it will influence the development and performance of the business ecosystem where it operates. They need to understand their own role in a business ecosystem and how they can influence the ways that business ecosystem operates. (Iansiti & Levien 2004). According to the interview participants this is something that companies should consider even more in the future; companies need to have clear strategies thought before they enter in business ecosystems. In this way, they know better the level of their own preparedness on how much information they are willing to share with other members and where the boundaries should be set. They need to consider other companies that belong to the same ecosystem, when they are planning their future actions. For example, according to Armstrong et al. (2015, 73) when companies are considering whether they should make new investments or divestitures, they need to understand that these kinds of decisions will have an impact on the whole business ecosystem. Therefore, management must consider when it is the right time to implement these new decisions and with whom these decisions ought to be made. Even though, it is usually the keystone that makes a final call on investments decisions, in ecosystems opportunities and threats need to be scanned strategically together. This means taking into consideration as many different perspectives throughout the whole ecosystem to ensure that information flows across the whole system. (Armstrong et al. 2015, 73; Valkokari et al. 2017, 21). keystones should also be prepared to managing other kinds of governance aspects such as how to maintain other members in the business ecosystem. keystones concentrate on maintaining a balance in a business ecosystem and offering incentives for partners. Furthermore, controlling risk factors falls on the hands of a keystone. This means being able to handle “innovation” and “adoption chain risks”. The first one is connected to a situation where the keystone ensures that members have the needed capabilities to implement the planned process. The second one relates to how willing

other suppliers are to implement the planned task and whether there is a need for developing inducements for them to lure them take part in the process. (Adner 2017).

The keystone is also expected to create a platform that connects other members and makes it possible for them to interact with each other (Rong et al. 2017, 235; Iansiti & Levien 2004, 95). Usually, a platform in the ecosystem literature means a technology-based platform but it also refers to a non-technological environment which enables collaboration among different companies to take place. Platforms can be, for example, any equipment, service or communication device that help coordination between ecosystem members. Overall, as it was stated earlier, managing ecosystems is different from managing traditional networks in several ways. It demands being prepared for making significant changes inside and outside the company. Companies in the leading position in an ecosystem are expected to share their resources with other members of the ecosystem. This is said to enhance the culture of information and resource sharing. However, the way how these resources are shared between partners should be carefully thought beforehand (Weil & Woerner 2015, 33). This implies that companies should consider what and how much they are willing to share with each other and what are those resources that are best kept solely in their own usage. However, it may prove to be an impossible task for companies to share something that they consider as being a crucial element when it comes to their business performance. When asked about things that will possibly change in the management of ecosystems in the future, the interview participants answered the following:

“This is a huge transformation for us culturally and it is a different thing to look at that customer and that value network and to consider what is our role and how can we influence it”. Customer relationships change and the way to act with customers changes and another change is an activity within our organization that has been quite independent and now that the role is changing, so more is considered together how to operate more collaboratively, how to collaborate within our own organization and how to discover our own role when collaborating with organizations outside from our traditional organization and how one can itself bring value to it because if one cannot deliver this value then it becomes soon obsolete where the most agile actors can take the lead and my role is to catalyse this transformation” (6)

“I myself would hope that leadership would develop toward the direction of not having one’s own vested interest...I would like that the level of neutrality in management would increase and competitors would also have room in the same table, but one must ensure that one’s own competitiveness is in order” (5)

”Keystone companies of course must base that development work for their own business and own business needs but at the same time be able to take into account the durability of the business ecosystem in a way that other partners involved can benefit from it and at this way they are also able to build their own future and operations in that entity, so to clarify this”... ”Hopefully from 2025 it would be more natural and the dynamism of the ecosystem would be better understood in a way that it would really exist and not only written that it is dynamic without the meaning, and actors would be willing to participate in a project also with those companies that are called as competitors, but how open this will be among companies remains to be seen” (7)

Change in mental models is something that the interview participants hope in the future. This is more evident than any specific physical activity that keystones or other members could do. The interview participants also emphasized that, for the sake of a well-functioning management, it is important to understand the complexion of ecosystems and those kinds of procedures that are required when acting in the ecosystem level. The keystones or dominators seem to possess the ultimate control in business ecosystems. Partly it is something that the interview participants hope would be diminished in the future and control would become more shared between parties. Despite this, it seems that keystones need to exceed their power at least at some level in the future, because otherwise business ecosystems seem to lack that essential factor that pushes processes forward. The interview participants expressed their preferable images when considering how they would like to see the development of ecosystem management in 2030. Their replies expressed that they hoped for less hierarchical management and less control of the few parties. There were a few comments that stood out among the interview participants. According to one of the interview participants, the time span of the thesis will not bring significant changes into ecosystem management. This is due to these things develop slowly and it takes quite a lot of time to create a well-functioning ecosystem. There were also a few other interview participants who emphasized that ecosystem function takes time to develop and these projects are usually very time consuming. Therefore, the

interview participants do not believe that notable changes in management take place at least within the time frame of this research. It is evident that changes influence on an organizational culture. When a value network expands, companies must consider things on a wider scale and see their customers from new perspectives. Changes in business ecosystem roles were also brought up. Companies need to find their own role in a business ecosystem and bring their own contributions to it. Otherwise, without bringing any added value, they are not seen as attractive partners and can be displaced by other parties in the future.

3.3.3 Vision

Managing ecosystems requires keystones to clarify a common vision (Zahra & Nambisan 2012; Planko et al. 2017). Moore (1996) and Iansiti & Levien (2004) share the same ideologies about the importance of setting a shared vision in order to communicate and add value in the business ecosystem. By stating vision clearly, the keystone ensures that the whole system operates smoothly (Zahra & Nambisan 2012, 228). Rong et al. (2017, 235) add that creating and communicating a company's vision is a twofold process. At first, the vision is communicated to the company's internal stakeholders. This is how the company's mission statement and the reason for its existence is translated within the company. The next phase takes place when the vision is articulated to external members that are the members of the business ecosystem. This second stage ensures that interaction takes place among important members that are needed to complete a certain product or a service to end customers. It is argued that a common vision contributes to greater performance within the business ecosystem because it enforces integration and co-operation between members. Additionally, Ketonen-Oksi and Valkokari (2019, 33) emphasize that communicating a shared vision promotes the co-creation of value in ecosystem activities. These should be strengthened by various practises that allow companies to integrate their activities in practice. Therefore, it can be argued that having a shared vision belongs to the strategically important tasks of the ecosystem management. Pellikka and Ali-Vehmas (2016) list differences between a traditional strategy and ecosystem strategy. The main difference comes from a collaborative thinking that lies in the essence of ecosystems. For example, when a manager communicates a vision of the company at an ecosystem level, it must be built in a way that it increases shared beliefs and shared goals between ecosystem members. (Pellikka & Ali-Vehmas 2016, 20). The

interview participants expressed their views about vision in business ecosystems in following terms:

“A long-term ecosystem vision has to be combined with a shorter-term business goal and vice versa” (1)

” Visionary, courage and belief that these are matters that take long-term time scales... taking the leading position and creating vision and inspiring others and communicating through that. Because it is difficult to get others involved, forcing is not an option...one must believe in that thing, and when projects are launched it has an empowering effect and all possible suspicions are forgotten which enables that true collaboration” (9)

3.4 Relational factors

3.4.1 Trust

Trust is an important element that is strongly related to the performance of the business ecosystems. This is also illustrated in several previous articles (see. Planko et al. 2017; Dimecc final report 2017; Heikkilä & Kuivaniemi 2012). More specifically, building and developing trust among ecosystem members is seen as an important indicator for lasting business ecosystem collaborations. A level of trust influences the nature of different agreements between companies. Usually, if the level of trust is high, there is less need for stricter guidelines. Trust is the ultimate force that enables collaborative decision-making in ecosystem-based activities. An increased amount of trust contributes to the achievement of common objectives. There are several ways for building trust in the network, but these described ways do not exclusively mention whether they are industrially related factors or do some other situational factors influence how companies decide to utilize different ways of building trust. Additionally, it is argued that trust can even replace the need for more formalized agreements between members. It can overcome certain rules that otherwise might be considered as essential guidelines for collaboration. (Planko et al. 2017, 40–41). An interview conducted by Planko et al. (2017), reveals that trust is also connected to other mechanisms such as consonance and dedication. When there is a high level of trust in a network, operational factors are running smoother across the network. It also has a cost reducing effect because companies do not require every

information to be dealt as formalized contracts between involved parties. (Planko et al. 2017, 46). One factor that has been stated to contribute to how trust can be enhanced in business ecosystems depends on earlier cooperation between partners. Usually, partners that have worked together earlier have more tendency to trust each other better (Annanperä et al. 2016, 96).

The positive effect of increased trust in business ecosystems is also visible in the Dimecc's report on different collaborative business forms. One of the articles in the report illustrates how Rolls Royce developed its business ecosystem. The research discovered certain prerequisites that need to be met in order to create a functioning business ecosystem. One of these stated prerequisites is developing trust between members. (Mäenpää et al. 2017, 37). However, developing trust between different companies can take several years before it can be accomplished (Kuntola & Ylimäki 2017, 77). Furthermore, Planko et al. (2017) also emphasize that no one mechanism such as trust can be developed separately from other mechanisms. Instead, they are interrelated to each other where one element such as trust can reciprocally strengthen other elements in the network such as consonance and cooperative elements. From this it can be assumed that without trust between partners, possibilities for creating a shared vision and creating a well-functioning business ecosystem will be diminished because they are difficult to create without it. Several interview participants highlighted the importance of trust in business ecosystems. From their descriptions, trust can be thought of being a foundation for the development of the successful business ecosystem. Some of them also pointed out that building trust is a long-term process. This time-consuming feature can also act as a restraining factor for creating new cross-sectional relationships. During the interviews, frustration was felt among some of the interview participants, when they described typical situations in ecosystem-based collaborations. Reason for this was that such cooperation models take so long to succeed in real life. The interview participants considered trust as one of the main capabilities in successful business ecosystem operation in the future. A few of them commented this as follows:

“Yes, this is more about trust and interaction between people than between organizations and openness” (4)

“Building trust is important when managing ecosystems... In ecosystems one important element is building trust and if this kind of a group where, for example, strategic foresight

is implemented collaboratively, and some actors involved do not ever share anything then trust is not built and everything else starts to shun down.” (5)

” There has to be trust for motivation and enthusiasm to succeed but trust alone is not enough... and developing trust takes many years and wine glasses.” (8)

3.4.2 Value creation versus value capture

According to Valkokari (2015, 19, 21) managing business ecosystems is focused on both capturing and creating value. This means getting the most returns via interacting with others and utilizing ecosystem resources to bring more value to customers. From the perspective of a keystone company; even though it is responsible for communicating basic governance rules for the ecosystem, it cannot act without others approval. It is dependent on others because the major influencer of the success and prosperity of the whole ecosystem is the ability to create value together through cooperating (Valkokari et al. 2017, 14). Valkokari et al. (2017, 21) argue that it is time to take a new perspective on ecosystem management and function where the keystone is not solely responsible on the well-being of the ecosystem, instead each party should bear responsibility for the sake of common prosperity. Creating value collaboratively should be the essence in ecosystem thinking. Companies should consider more how their actions are viewed by current and new ecosystem players. (Valkokari et al. 2017, 21). The difference between value creation and capture is that the first focuses on creating value within the whole ecosystem. The latter one is more focused on gaining the biggest share of returns for own purposes. Usually, the latter approach works in the advantage of the leading companies in business ecosystems which are called more as value dominators than keystones (cf. Iansiti and Levien 2004). Moreover, value capture is more in line with the notion that competitive advantage is considered as the most crucial issue to gain in business ecosystems, especially for the leading companies. However, the trend has shifted towards emphasizing more activities that create value to all ecosystem members (Adner 2017, Valkokari 2015). The function of the ecosystem is based on value creation where members integrate their activities to deliver value to end customers and the keystones' task is to increase collaboration and concentrate on creating value within the business ecosystem (Valkokari 2015, 19–20). During interviews, the interview participants talked about the importance of value creation. The theme came up in several situations. In the whole, value creation

is considered as an element leading to a formation of a successful and healthy business ecosystem. Some of the interview participants also mentioned difficulties related to the value creation process. For example, a value creation process, which would bring benefits to most of the parties involved, is a difficult task to attain in real life. They considered value creation in business ecosystems as follows:

“When it comes to the role of the management, you do not just try to find that one thing which when successful brings greatness, but what you create into it that helps you involve those companies that want to be involved and they also get something in return...that is the thing...and from the perspective of a large company, we bring lots of knowhow that those start-up companies do not possess themselves, for example, from handling law aspects, customs and purchasing that they do not even think of...and providing those in their usage is very valuable for them.” (9)

“There must be a change in thinking in the background, understanding about value distribution between different partners...Instead of blinding ourselves from these aspects and setting stricter contracts, we should think what the common win-win style approach to the problems is.” (6)

“In a healthy relation combining these two together...Companies need to decide on those matters that are not so critical for one’s own business that they could be shared with others.” (7)

3.4.3 Dynamic capabilities

“Dynamic capabilities are the firm’s ability to integrate, build and reconfigure internal and external resources (including the firm’s ordinary capabilities) to address and shape changing business environments” (Teece 2017).

Dynamic capabilities are the organization’s way to adapt, transform and scan its surroundings. (Teece 2017, 1, 3). These dynamic capabilities support companies to capture and create value in ecosystems. In highly competitive and more digitized business environments the meaning of these capabilities has grown in importance. Dynamic capabilities represent an ecosystem leader’s ability to detect opportunities and threats

better, create more capacity to produce more innovative solutions and orchestrate the whole ecosystem better. The latter relates to how well an ecosystem's functions are divided between parties and how well these activities are communicated through the whole ecosystem. (Helfat & Raubitchek 2018). The leader of the ecosystem can utilize these, for example, when it decides to change its business model, ensure collaboration with other members and help the ecosystem to maintain its prosperity in the time of change. (Teece 2017, 5; Helfat & Raubitchek 2018, 1391–1392) Teece (2017, 4–5) differentiates between “ordinary” and “dynamic capabilities”. The main difference is that the first one is related to a firm's present activities and present performance metrics, whereas the second one is connected to future related information. Dynamic capabilities enable companies to be creative and adaptable in the long run. Ecosystem leaders that can utilize dynamic capabilities are said to possess the ability to detect trends and manage interorganizational relations. Additionally, these capabilities are connected to robust management. (Teece 2017, 4–5).

Furthermore, Teece (2017, 18–19) clarifies that organizations need different kinds of dynamic capabilities depending on which stage they are in an ecosystem lifecycle. These stages include “birth”, “expansion”, “leadership” and “self-renewal”. At the first stage, essential skills are related to “environmental sensing” to detect emerging signals. At the second stage, it is important to “seize” to expand new business environments. At the third stage, the needed skills are connected to ability to scan possible “threats and minor changes” that may come from the outside environment and keeping balance in the current ecosystem. At a final stage, skills are related to “sensing future possibilities” in other words turning one's look forward to gaining new ideas. (Teece 2017, 18–19). Furthermore, dynamic capabilities are often connected to strategic foresight. It is stated that efficient strategic foresight process requires dynamic capabilities (Rohrbeck & Schwarz, 2013, 1595; Vecchiato 2015, 26). This connection can be seen, for example, in articles of Rohrbeck (2012) and Battistella and De Toni (2012) who propose that dynamic capabilities can contribute to the firm's corporate foresight performance by offering practical elements that help companies conduct foresight activities in real life context. Some criticism on dynamic capabilities and their relation to ecosystem management can also be found. Even though several articles have highlighted the importance of these capabilities (Teece 2007; Teece 2017; Helfat & Raubitchek 2018), there is still a lack of information on what kinds of capabilities companies that manage ecosystems use in practise (Helfat & Raubitchek 2018, 1393). The interview participants highlighted the

need to possess similar kinds of capabilities that are described in the dynamic capabilities' theory. These capabilities stood out when they were asked about capabilities related to business ecosystem management in the future. They replied as follows:

"Ideas are never the bottom line, more the bottom line is the ability to do things and take things forward and think how to actively find partners... here building internal networks has played an important role, it is related to developing new competencies and new solutions." (6)

"How do you create a project that is attractive enough, especially in global competition, how do you lure the best companies and get them involved? And there are two things; how you tell your story and communicate it and how you can create actions to get things going forward... Courage to seize the opportunity when it is, and we can implement this together with others and develop, and then we have something which is our unique thing that helps us to take these things strongly forward...And in Finland there are only few companies that can scale things fast and take things forward, so it is our advantage and it is important to identify one's own strengths" (9)

"Fast pace is required to respond to the pace of global competitors, identifying one's strengths becomes even more important, good facilitation for continuous development." (1)

When analysing the interviews, several interview participants emphasized that it is important to be able to take processes forward. Business ecosystems are complex environments. Therefore, companies need to make faster decisions to keep up with development. They need to develop innovative solutions at a faster pace. Recognizing new opportunities, acquiring new customers and new business ecosystem partners help them to keep their competitive advantage. Investments in constant developments are a company's leverage against others. Every player needs to acknowledge their strengths and weaknesses to know when acting in the business ecosystem level becomes reasonable. It can be assumed that with these kinds of capabilities companies can operate better in complex environments. Furthermore, capabilities to adapt and shape markets become more evident in complex environments. Additionally, internal networks need to be well organized so that they act as support mechanisms which help companies to get

ready for new challenges that emerge when acting in interorganizational networks. Business ecosystems cannot be managed with traditional business models. It is more dynamic management that requires abilities to shape their markets when it becomes necessary. The chapter four deals with the management of business ecosystems from the perspective of strategic foresight. Connections to capabilities such as adapting, shaping and scanning the environment can be recognized and their significance to business ecosystems is explained.

3.5 Challenges related to ecosystem management

Mäenpää et al. (2017, 39) emphasize that sometimes companies fear that they cannot maintain control if they share information with their outside stakeholders. This uncertainty prevents them from committing to ecosystems in full. Additionally, Annanperä et al. (2016, 96) state that ecosystem members may not always share the same objectives within an ecosystem. Also, they may have different views regarding their roles in an ecosystem, which causes challenges for managing these ecosystems. This is especially visible if members do not acknowledge other participants' contributions to the ecosystem. These notions are in line with Valkokari et al. (2017, 13–14) who state that one of the main concerns for ecosystem management lies in discovering a symmetry among common goals of all members and among their individual goals and what each member expects to gain from acting within a certain ecosystem. This is because companies usually tend to protect themselves and put their own interests first. They might choose not to share privately held information with others because they are afraid of losing control. There are also contradictory thoughts on whether acting in an ecosystem brings the expected returns to all actors or will those benefits be shared between a smaller group of companies. Moreover, Helfat and Raubitchek (2018, 1398) argue that one of the most essential challenges for all keystones, despite the ecosystem type, relies on finding the appropriate way to best create and capture value within an ecosystem. Additionally, trying to define the exact actors of one ecosystem has been defined almost as an impossible task, which also makes it more complicated to manage. One reason for this can be traced back to its self-evolving nature where new players can enter in an ecosystem and the number of players keeps on expanding. Heikkilä and Kuivaniemi (2012, 22) take this kind of thinking on defining actors even further by stating that keystones will face

even more difficulties when they are trying to choose their future partners and to find most productive business environments.

Aarikka-Stenroos and Ritala (2017, 30–31) describe ecosystem management challenges as changes in current management practises. For example, they state that ecosystem management is experiencing managerial changes which illustrate either an opportunity or a challenge to existing management. These changes include changes in collaboration methods towards broader cooperation, changes in mechanisms and practises and time related changes which implies that things are happening at a faster pace. These changes are said to bring challenges to the current ecosystem management because they represent a new and different way of managing. Following this logic, it could be assumed that without realizing the impact of these changes, it can have negative consequences to companies in leading positions in terms of losing control and keeping other players content. These changes are in line with Helfat and Raubitchek (2018, 1391) who argue that keystones should find new ways to constantly change their existing management practises to better adapt to new requirements caused by constant changes in the marketplace and intensifying rivalry between companies.

Furthermore, one of the challenges for keystones is connected to “competitive innovation” where competition comes from new players operating in different business fields. These new players have discovered new ways of creating existing products or services. At the ecosystem level this means that also current ecosystem members can turn out to become competitors to current keystones. (Helfat and Raubitchek 2018, 1393). Such competition can even lead to a change of roles. Keystones may even lose their position as current leaders of the ecosystem if they can be replaced by existing or new player with better resources. (Annanperä et al. 2016). Although Helfat and Raubitchek (2018, 1398) describe ecosystem management challenges from a viewpoint of a digital platform leader, they state that all ecosystems face these kinds of challenges, but the way they experience these challenges may be different to some extent. According to the interview participants sharing of information is classified as a crucial challenge both today and in the future. Most of them also acknowledged challenges related to cooperating across organizational borders and managing individuals across traditional organizational borders. Another notable challenge was related to distributing value equally across the business ecosystem. Below there are a few citations on these matters.

“Sometimes you need to collaborate with new partners and it is very intimidating for companies and a reason why companies get stuck in familiar futures is that they do not want to cooperate with partners with whom they have not cooperated before, therefore, new solutions remain small...Strategic thinking is not implemented on matters such as what things and with whom companies are willing to cooperate so that future business would be different from present, and easily companies get too stuck in considering their competitive position and competitors with whom they are currently competitors, and then everyone wonders why radical innovations come from outside that industry, which is because no one wants to think about how this could be done in some other way.” (7)

”How to manage ecosystem relations because there are so different relations between different actors and it makes the ecosystem functioning more complicated...it requires...hopefully, there will be more of these examples so it will become easier to say what the right kinds of practises are...And you need to take into account the needs of different actors and find out whether they are ready to get involved in it. And then, when there is a solution, more challenges emerge when trying to find the right model from a business perspective and at the same time consider how value can be divided fairly between different actors and there is no guidebook, this is a learning path” (6)

“How I manage people and organizations to whom I have no command, impact without authority, traditional managers are against this because it makes them feel that they are losing control” (2)

“The risk of parochialism” takes place when companies are too locked in their current way of viewing futures that prevents them from seeing the wider picture (Ruff 2015, 46). This may be one reason why it is so difficult to operate at a business ecosystem level. Management problems arise especially when keystones try to control and manage other parties without a real contract-based authority. Companies face difficulties in seeing their current competitors as possible new future partners. This again harms the principle of a functional business ecosystem. It also seems that ecosystem goals are not defined clearly. Some of the interview participants also reasoned that challenges come from inability to think about the true reasons why companies are a part of some business ecosystem and what are their most important goals that they want to achieve. This is related to considering their own readiness to sharing information and determining what kind of

information they are willing to share in their business ecosystems and what kind of information is best held privately. It seems that these kinds of things are easily mirrored from one's own business viewpoint in contrast to considering goals that companies could accomplish together. In this way, companies run the risk of forgetting to think about strategic aspects that could benefit them in the future. By acting like this they fail to recognize opportunities and to think in a more dynamic way.

In their paper Drews and Schirmer (2014) study four different case studies to find out what kinds of challenges business ecosystems face and how business ecosystems can better cope with these challenges. Lots of challenges are related to management aspects. This means not only understanding the structure and operations of the focal company but also the business structures of other players as well. Usually, challenges arise if structures and processes of other members are not fully understood. Therefore, it is essential to acknowledge one's own role and other's roles within the ecosystem. By acknowledging these different roles contributes to discerning the structure of the whole business ecosystem better. Additionally, challenges related to governance structure arise because managing differs from traditional management. Finding common goals can prove to be difficult. As a solution for this, it is proposed that the minimum effort that business ecosystem partners can do is to set at least a few generally agreed terms of the most important themes that represent larger objectives in that particular business ecosystem, which help members work together, if shared principles are difficult to set and obey. (Drews & Schirmer 2014).

4 RESULTS: THE USE OF STRATEGIC FORESIGHT IN BUSINESS ECOSYSTEMS

4.1 Strategic foresight -its importance and reasons for practicing it

Strategic foresight helps companies anticipate the future. Strategic foresight is related to scanning changes in the environment and interpreting the meaning and impact of these changes for preparing for the future. It helps to shield against the uncertain that cannot be predicted accurately. It is related to anticipation and generating views about the future. Strategic foresight is commonly connected to strategic management to explicate its role in ensuring a company's future performance and gaining competitive advantage (Rohrbeck 2012; Rohrbeck & Schwarz 2013). Rohrbeck et al. (2015, 1) and Rohrbeck and Kum (2018, 106) add that corporate foresight forms a basis for companies to distinct themselves from other companies in the long term. A current view on strategic foresight tends to highlight an ability to integrate an organization's foresight activities with other organizational functions (Rohrbeck et al. 2015, 4).

Strategic foresight is used for perceiving changes, both opportunities and threats. It involves anticipating trajectories of changes and coming up with solutions to adapt and understand these changes (Vecchiato 2015, 26; Rohrbeck 2012; Rohrbeck & Schwarz 2013, 1596). Rohrbeck and Schwarz (2013, 1596) highlight that scanning trends and creating a long-term plan for responding to them is not an adequate response without the capability to adapt. An ability to prepare for changes, which are emerging from the outside environment, is called a company's "strategic agility" (Vecchiato 2015). Petrick and Martinelli (2012, 51) add that even though it is important to detect trends in a business environment, more important is to understand their possible interconnectivity and how they can be intertwined together to develop future images better. In their paper Vecchiato and Roveda (2010, 1528) discuss the importance of understanding both "effect" and "response" uncertainty. It implies that managers should focus not only on the impacts of drivers of change but also to come up with methods to proact to those drivers of change. This means coming up with plans before changes are taking place to enhance resilience. Strategic foresight helps companies deal with disruptive change (Rohrbeck & Schwarz, 2013, 1594; Vecchiato 2015, 25). Rohrbeck and Bade (2012, 7) propose that detecting "weak signals" and understanding their possible influence should be a part of a company's

corporate foresight activity. This demands companies to create constant plans for anticipating change to come up with proper solutions (“responses”). Strategic foresight is also used to translate “tacit knowledge” to “explicit knowledge” where ideas and perceptions are translated into a more formalized way of communicating in an organization, for example, in format of scenarios and roadmaps. (Vecchiato 2015, 30). Figure 5 offers an example of strategic foresight process. It covers its main features and most important steps which are needed for implementing the process. It is derived from Daft and Weick (1984). According to the model, companies scan their environment, interpret the scanned information and translate it into managerial implications which leads managers to come up with proper solutions for future actions and constantly learn from their activities. Here each of the steps represents a phase which contributes to a well-grounded interpretation process.

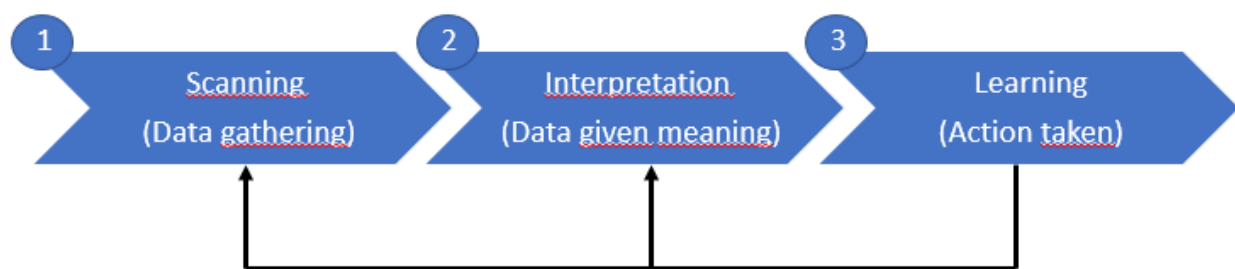


Figure 5 Model of Organizations as Interpretation Systems (Daft & Weick 1984)

Strategic foresight provides several value adding benefits for companies. “Enhanced perception” has been said to have the most crucial effects. (Rohrbeck & Schwarz 2013, 1604). It means that companies are more sensitive towards changes which makes them more active in scanning changes and interpreting them. In addition to anticipating changes, it is argued that one of the outcomes of strategic foresight is to challenge managers’ existing attitudes and views on the future (Vecchiato & Roveda 2010, 1532; Rohrbeck & Schwarz 2013, 1595; Ruff 2015, 39). By challenging one’s mental models enables managers to detect “white spaces” or “white spots” better (Rohrbeck 2012, 445; Ruff 2015, 41). Additionally, strategic foresight has the potential to increase “a process of planned learning” within organizations where managers can utilize strategic foresight to make better plans and understand their business environment on a larger scale.

(Vecchiato 2015, 26). This “planned learning process” implies that managers do not have to predict the future, instead they must be able to respond and adapt to changes in a way which supports the nature and characteristics of their business environment (Vecchiato 2015).

The characteristics of a business environment are said to have an influence on how fast companies should respond to changes. A company’s business environment is traditionally divided into a micro and macro environment. It is often stated that companies can gain more information on their micro and macro environment via utilizing corporate foresight methods (Vecchiato 2015; Vecchiato and Roveda 2010). The microenvironment consists of factors to which the company has direct ties, whereas the macroenvironment consists of wider factors to which the company may not have direct ties. (Vecchiato 2012, 437). The latter one can also be described as encompassing the company’s business ecosystem. Vecchiato (2012) divides a business environment into complex or dynamic environments depending on the characteristics of drivers of change. A dynamic environment is characterized by a fast pace of change, usually affected by technological aspects. Due to this high volatility, plans are often made for shorter time periods. In contrast, companies in complex markets are usually more matured industries, where competition is not as volatile, and plans are usually made for longer time periods. However, these assumptions are made quite categorised. One can speculate whether it is possible to divide industries either being complex or dynamic instead of being both at the same time. Especially, due to increased collaboration between organizations across industries, the nature of a business environment can experience even more disruptive changes in the future where the dynamic and complex characteristics can become more intertwined than today. A few of the interview participants also highlighted that much of a company’s foresight process depended on the industry. Foresight processes can be very different depending on whether companies exist in a dynamic environment, which requires fast decision making, or in a complex environment, where decisions are made for longer time periods. Below there are some comments from three interview participants:

“...The meaning and form of strategic foresight is different in different contexts. How adaptive the environment is and how shapeable the environment is, and if strategic foresight is already well implemented such as scenario planning, then strategic foresight

is organized well, but in highly volatile environments there is no time for a profound scenario planning, it is different and dependent on the context of the organization.” (3)

“Well it depends on the industry, the company has for example a great report on strategic foresight and from there we receive excellent reports, whereas other companies have to implement strategic foresight themselves because there are no readymade reports for them.” (4)

“We have different time perspectives in different business areas, in one area the time span for foresight is 2060 and in one of our projects the time span is 2030, and due to these business areas are very different, therefore, also foresight cycle is different... it depends on the operating environment and which trends influence the most” (6)

The answers from the interview participants disclose that strategic foresight has a role in planning future activities, but the time span and role differ depending on the industry. The interview participant six brings forth the meaning and influence of trends. This reinforces the notions of Vecchiato (2012) that industries focus on scanning trends that seem to have the most influence on a specific industry. The answer of the interview participant three illustrates the power and influence of a specific business environment. In volatile environments where change is happening at a faster pace, traditional scenario planning may not bring enough results in a needed time scale, which can be a very short time period. This implies that companies should strive for strategic foresight activities that can respond to the requirements of their industry instead of having selected some known mechanisms for scanning which may not suit their specific needs. Understanding of one's environment lies in the essence of well-practised foresight techniques. Vecchiato and Roveda (2010) introduce companies' different approaches to strategic foresight. A connection to ecosystem literature can be found, for example, in their description on how companies are using strategic foresight to better understand the nature of drivers of change, especially, if those drivers are so called “discontinuous drivers of change”, which may influence on the structure of the whole industry. Vecchiato and Roveda (2010, 1532–1533) emphasize a distinction between “discontinuous drivers of change” and “drivers of change” that require different strategic foresight approaches, when detecting emerging signals. The first one relates to an “anticipatory approach” where it is essential to set the

driver first in the strategic foresight process and consider its influence on a current business situation. These changes are typically disruptive and can even change present industry conditions to a large extent. In contrast, the latter one is related to a “sustaining approach” which usually requires smaller incremental changes to be taken. These include smaller-scale changes in a company’s business model and usually serve the need of existing customers in the existing markets. Therefore, it is important for management to realize what kinds of drivers of change they are dealing with in order to ensure adequate strategic foresight responses also in their business ecosystem environments.

4.2 Difficulties and challenges for practicing strategic foresight

Despite its acknowledged contribution to a company’s future performance (Battistella & De Toni, 2012; Vecchiato 2015, 25), strategic foresight has proved to be a demanding task to implement in a real world. Managers have difficulties in gaining trustworthy future related information. Especially, this difficulty prevents them gaining insights on changes in a long-term timescale. Sometimes this notion is connected to a term “bounded rationality” which implies that managers lack the ability to gain insights about the future due to their short sightedness and therefore, cannot detect changes in their external environment (Vecchiato 2015, 27). Vecchiato and Roveda (2010, 1529) refer to “environmental uncertainty” that has the same ideologies that managers do not have enough information on their external environment and therefore, cannot make proper anticipations on probable changes. This can result in managerial inertia which constraints managers from anticipating futures because they focus too much on their current methods and short-term goals (Vecchiato 2015, 32). However, if executed with care, corporate foresight is a way to outweigh these locked mental models (Rohrbeck 2011, 19). In this study these were also difficulties that the interview participants felt belonging to challenges in implementing strategic foresight in the business ecosystem level. They replied the following way:

“Too short time span, companies acknowledge the benefits of long-term thinking but still make decisions in the short term.” (4)

In addition to being able to scan in a longer time frame, the interview participant one emphasized the importance of having a balance between short-term and long-term views.

This means that a company's internal strategy needs to be connected to the business ecosystem vision:

“There must be a sufficient amount of forward-looking business, when creating a longer-term vision together and its iteration, which means that not only looking five years ahead without considering what might happen after six months, or thinking what might happen after six months but it does not iterate with the ecosystem vision; maintaining a bridge between these two.” (1)

The interview participant eight also acknowledged this gap between short- and long-term plans:

“Strategic foresight cannot be implemented accurately or with sufficient verification margins that number experts wish and that is seen as an obstacle to decision making; this can be related to inability to take risks or decision making systems, tolerance for uncertainty and else, resilience towards uncertainty is required and a lot these days .” (8)

The interviews revealed that strategic foresight is not implemented enough in organizations. And if it is implemented, then the time span is more focused on short-term plans. There also seems to lie an assumption that companies recognize the importance of thinking in the long-term but still they concentrate more on gaining results that can be achieved in a shorter time scale. And this represents a real challenge for creating an effective strategic foresight process in business ecosystems. This could be due to companies' unwillingness to plan in long-term even though they claim to do so. There seems to be a gap between the planning and the actual implementation phase. Difficulties experienced in business ecosystems seem to derive from uncertainty about how to gain more trustworthy results. According to Rohrbeck et al. (2015, 4) one of the difficulties for performing strategic foresight has been that managers do not know how to make strategic foresight insights more practical in today's companies. This has been due to a lack of time or inability in analysing and translating insights into a communicative form. Nemeth et al. (2018) outline some of the common defects that companies might face in their corporate planning process. They emphasize that even if drivers of change were detected well in the beginning of the processes, it does not guarantee that their

interpretation would be comprehended in a way that it should be, and the anticipated time horizon of these drivers can be wrongly anticipated. Additional reasons for failures in the corporate foresight process can derive from the company's cultural aspects or lack in using methods properly. However, corporate foresight's connection to a company's performance level is not straightforward. This is because a company's performance is strongly influenced by the whole business environment and the actions of other players. (Rohrbeck & Kum 2018, 105). From this it could be assumed that the characteristics of the business ecosystem, where the company operates, strongly influence the level of strategic foresight implemented in that business ecosystem and its overall effectiveness.

4.3 Networked foresight

4.3.1 The use of network foresight in business ecosystems

One way to improve a company's foresight process is to combine members from versatile fields which widens existing networks and enables to scan changes better (Rohrbeck & Schwarz 2013, 1594). It is assumed that strategic foresight can be more powerful when external stakeholders are added into the process. In their paper Rohrbeck et al. (2015, 6–7) present interesting newer views on corporate foresight. They explain a term “Networked Organizations” which they believe will start gaining more awareness among scholars. One reason behind this is growing complexity in today's business environment where more companies are starting to widen operations and to include more members in their operations to act more collaboratively. Van der Duin et al. (2014) and Heger and Boman (2015) share similar views when discussing “networked foresight”. This similarity can be seen that according to Heger & Boman (2015, 148–150) “networked foresight” can be almost considered as a synonym to “corporate foresight”. Its distinctive feature is that it is implemented together with other companies. According to Van der Duin et al. (2014, 62) “networked foresight” is closely connected to a term “open innovation” which supports an idea that companies should utilize both internal and external resources to discover new ways for achieving competitive advantage, enhance their performance or create new offerings. According to Heger and Rohrbeck (2012, 819) this interorganizational scanning process is characterized by multi-level uncertainty. In addition to the uncertainty level in futures research, it takes a wider perspective by highlighting the importance of understanding the overall dependence of many things

causing that uncertainty. This is related to complex environments, which is also characteristic for a business ecosystem environment. And when considering possible increase in the usage of networked foresight at the business ecosystem level, the interview participant eight believes that the need for networked foresight will increase and expressed this as follows:

“Probably yes, because uncertainty increases. And a smart management understands that scanning must be done and, they need to think about future images, but the cycle is difficult; when it accelerates also foresight cycle should accelerate” (8)

Here the view is from a management perspective. It implies that the importance of strategic foresight should not be underestimated at the ecosystem level. Since uncertainty is expected to increase, an ability to recognise changes becomes more important for management. But still the question remains that if things are happening at a faster pace, what are those mechanisms which would help members of the business ecosystem anticipate threats better together. And would it be reasonable to use some known methods or should those methods be tailored to the needs of the business ecosystem in question. Certainly, it could be expected that when creating images of the future collaboratively, it would allow companies to get access to wider resources when scanning their future and the quality of their foresight processes would improve due to increased capacity for developing solutions (cf. Heger & Boman 2015).

4.3.2 Characteristics of networked foresight

Results from networked foresight processes are mainly used in similar ways as in strategic foresight processes. These include being able to detect changes and even shape the environment, but here the environment is scanned through an ecosystem perspective. It is proposed that this kind of an interorganizational foresight prevents companies from being too short-sighted. It also contributes to gaining more versatile views on the emerging events because members in a network have access to additional information which can be obtained from their partners. (Heger & Boman 2015). This is in line with Heger and Rohrbeck (2012, 827) who state that utilizing various sources of information in their foresight processes allows companies to get access to information that would not otherwise be possible and increases the reliability of their foresight processes. They add

that participating with others increases trust in a network because companies get to know each other better when implementing foresight activities together. (Heger & Rohrbeck 2012, 827). Other advantages of interorganizational networks derive from enhanced transparency in data and knowledge dissemination between partners (Heger & Boman 2015, 158–159). Furthermore, “a shared vision” seems to strengthen the network and ease collaboration. Participants also seem to have more power to influence on external factors which allows them to have more influence over the evolution of the ecosystem and its design. (Heger & Boman 2015, 156–161).

In environments where several companies are working together across industries, it is important that certain conditions are clarified to all involved, such as “a shared vision and joint visioning, planning and execution programme”. Corporate foresight contributes to discovering new development opportunities when companies are using it as a collaborative activity. Rohrbeck et al. (2015, 6–7). As a result of this definition it could be argued as having similarities to a business ecosystem. When implementing corporate foresight activities together, it could offer more resources and ideas for a company than a company could acquire if it implemented foresight processes without the support from the business ecosystem partners. Even though companies are utilizing strategic foresight, it also seems that more collaboration is needed when it comes to business ecosystems and how well strategic foresight is utilized in these environments. When considering what benefits this collaborative foresight process can bring, the interview participants five and nine expressed it in the following way:

“When we are discussing, for example, about global challenges, large companies practise strategic foresight themselves, but specifically in cross-industries, companies want to utilize strategic foresight collaboratively. Especially, they wish that the anticipation of different timings would become easier that would help better understand the challenges that emerge through another industry.” (5)

The interview participant five brings forth companies’ preferable images by expressing their hopes for the future relating to the timing of their foresight processes, which would improve through collaborative processes. Here the highlighted benefits of strategic foresight at the ecosystem level derive from enhanced ability to cope with challenges. Especially, when these challenges represent ones that have potential to influence the company’s business environment on a wider scale. This could also imply that

interpretation on the true meaning of the drivers of change, even those that are hidden from a company, could be revealed with the help of collaborative effort. Additionally, according to the interview participant nine uncertainty will diminish and coping with challenges will get easier, when strategic foresight is implemented collaboratively. When summing up the expected benefits resulting from collaborative foresight, decreased uncertainty and improved ability to anticipate challenges emerge as the most essential ones.

4.3.3 Challenges in networked foresight

Networked foresight seems to face similar challenges and restrictions that are mentioned in strategic foresight and business ecosystem challenges. Companies may not realize possible opportunities that could derive from “networked foresight”. Some possible explanations for this derive from internal factors such as “inertia” that were discussed in the strategic foresight chapter. Additionally, “rigid mindsets”, which imply an organizational philosophy where an organizational culture supports obeying traditional and formal procedures, may cause partners’ unwillingness to share their resources with others. For example, management may hesitate to share knowledge because they fear that their partners are doing the same. However, incentives seem to contribute to partner companies’ attitude towards completing different foresight tasks and following the set guidelines. Additionally, it is suggested that commitment of partners can be enhanced through a leadership style, which is based on thoughtfulness and unambiguity. It is argued that when foresight activities are one-time assignments, the total utilization of benefits derived from networked foresight results is hindered. Therefore, companies would gain better results if they also used the information they gathered when working together with other partners for the individual purposes of the company as well. In this way, the results from collaborative foresight processes would last longer than one individual project. (Van der Duin et al. 2014, 73–74). This implies that practising foresight in a business ecosystem level is expected to have contributions to the companies’ internal foresight processes as well. The interview participant two expressed this as follows:

“...Especially, if you have a well-planned scenario process and can get people involved which helps them realize the bigger picture and through that bigger picture, they are able

to understand better those smaller changes they are coping with today. This prevents them from doing anything stupid.” (2)

Below there are a few comments from the interview participants when asked to describe how they see the role of strategic foresight in ecosystems:

“When it comes to strategic foresight, companies should cooperate more” (5)

“I think that it is utilized quite little, surely it should be utilized more both within organizations and across organizations.” (7)

“I think that it is practised but it is practised a bit by cutting corners and there could be more sharpening on what kind of the actual foresight process is and could be” (8)

One reason for difficulties seems to arise if strategic foresight processes in business ecosystems are not utilized properly. Although it is practised at least on some level, foresight processes should be more specific and focused. Experienced organizational uncertainty can increase, when foresight activities are expanded to cover the operations of the business ecosystem. Companies may start to shun foresight activities and fail to make decisions that affect their collaborative activities. Based on answers derived from interviews, one reason for this could be lack of practising foresight activities collaboratively. The interview participants emphasized that foresight in ecosystems is not at an adequate level and it should be practised more across organizations. Dealing with challenges is already difficult in traditional business environments. This challenge is multiplied when difficulties cover several business fields and other partners. Especially, if the partners of the business ecosystem change often or they are not yet known to each other, the foresight process holds more uncertainty. However, despite these challenges, participating more people and organizations seems to have a positive impact and helps scanning things in a different light. This contributes that changes can be coped with different mechanisms and scanned from diverse perspectives. This in turn contributes to enhancing organizational learning where individual companies' own ability to practise foresight processes could be improved. Together with improved foresight processes, the achieved results can span even further, and partners can utilize these results in other situations and apply these skills for creating more adaptive solutions in the future.

4.3.4 Requirements for successful networked foresight

Battistella and De Toni (2012, 22) propose that working together with others and utilizing their knowledge brings additional benefits to companies through improved foresight results. Van der Duin et al (2014, 70) describe “an innovation radar” as being one of the collaborative methods used in interorganizational environments. It contributes to anticipating drivers of change in a collaborative manner. In this method drivers of change are communicated and transmitted to all partners across the network via a platform where they can scan the environment together. According to Ruff (2015, 46) the effectiveness of corporate foresight depends on the willingness of participation among individuals within an organization as well as across organizations. Another aspect influencing its effectiveness depends on individuals’ capabilities to disseminate knowledge across fields to ensure that everyone involved understands its objectives and goals. Furthermore, this is best achieved through a less hierarchical company culture which supports flexibility and openness and helps companies create “open platforms” to enhance their mutual communication. Ruff (2015, 47) also argues that without resilience and constant monitoring of the foresight process by those involved, managers cannot expect good performance from their foresight activities. Furthermore, Van der Duin et al. (2014, 70–71) bring forth some managerial aspects that contribute to improved outcomes of “networked foresight”. They state that a manager or a group of managers is needed to orchestrate and ensure that a foresight team functions well and follows a strategy set by the management team. A connection to a business ecosystem literature can be found, for example, in one of their case company descriptions where “networked foresight” is guided by the “core and associate partners” that manage other members and set a shared vision to guide their projects. They also emphasize a few essential managerial practises. These include guiding selection of topics, providing a supportive environment and managing a diverse set of partners. According to them, following these principles orchestrating becomes manageable. In addition, the management should be responsible for ensuring the involvement and interest of other partners. It is also responsible for explaining what gains can be achieved via working together. Here ensuring a shared “vision” and strategy helps the network to complete their foresight activities more effectively and efficiently. (Van der Duin et al. 2014, 74–75). The interview participant two described requirements for a well-practised foresight process, as follows:

“Yes, it is different, there is no just one way to approach this, in addition to scenarios, there has to be something else, several firms have these so called “simple rules” as a support. They are generally accepted principles that are not given up and enable at least in some level that quite many people in large organizations can proceed in a complex operating environment as long as they do not break these simple rules” (2)

The above statement emphasizes the meaning of common accepted rules and the importance of understanding how to act in business environments that are complex in nature. The success of the foresight process in a business ecosystem depends on its members and how common rules, which are considered important, are defined to ensure successful operation. According to the interview participant nine, a foresight process is important and helps finding right partners and keeping up with changes. When asked about the level of strategic foresight processes and its requirements, the interview participant nine replied the following:

“You need to have deeper understanding than just considering different scenarios from out of the box, you have to really understand what are the things that matter and that requires deeper thinking... In our company foresight processes create a basis for seeing that future and for us it is somewhat easy...perhaps if you are uncertain about the future then you do not invest in anything...uncertainty can act as a barrier that prevents companies from making long-term plans.” (9)

Additionally, the interview participant nine describes that in their company people are open-minded when it comes to strategic foresight processes. The interview participant nine shows an example on their foresight processes and how these processes are implemented in practise and how they utilize those foresight processes to find the right partners with whom it is reasonable to form a new business ecosystem when the timing is right. In addition to finding new partners, this helps them keep up with the pace of change. The interview participant eight also believes that they have a well-functioning system to cover their foresight processes. Considerations about the level of their strategic foresight processes according to the interview participant eight are as follows:

“...and when it comes to ecosystems, we manage two ecosystems and in their management teams the aim is to systematically scan one’s own subject and one’s own field, and in our ecosystems that discussion is on a pretty a good level in its own focus area” (8)

Overall, the interview participants emphasized the importance of strategic foresight for organizations and the benefits that can be achieved through implementing strategic foresight also at the ecosystem level. Many of them also believed that its importance will grow in the future. Understanding what kinds of gains can be achieved from collaborative efforts were also highlighted. Especially, two interview participants from company representatives stated clearly their own foresight processes and clarified that they believe that their foresight processes are well-organized for scanning the future; both opportunities and challenges. This shows that they seem to trust in their current foresight system. These interview participants represent successful organizations which reinforces the notion that having good strategic foresight systems and participating collaboratively in foresight activities within the ecosystem contributes to the performance of the company. Additionally, it was also highlighted that companies’ internal structures need to be well organized. They are enablers for successful collaboration with outside partners.

4.3.5 Criticism of networked foresight

Van der Duin et al. (2014) argue that companies seem to lack managerial insights which prevents them getting better outcomes from their foresight activities. They argue that this might be a reason why the full potential of networked foresight has not been realized yet. When compared to the article of Van der Duin et al. (2014), Heger and Boman (2015) take a deeper look in how corporate foresight is implemented in interorganizational companies and explore what potential value it can add to its participants. Heger and Boman (2015, 148–149, 160) compare these potential value-added elements to the three stages in dynamic capabilities approach to find out which of the three stages “sensing” “seizing” or “recombination/transforming” networked foresight contributes the most. They find out that participants have improved results in “scanning” and “seizing” new opportunities and threats, but minor influence seems to be when it comes to impacting internal functions of a company which seems to be more related to companies’ cultural aspects. However, despite all the stated value contributions, Heger and Boman (2015,

161–162) criticize that the reliability of their research is inadequate for generalization of results because “networked foresight” lacks a strong scientific and empirical evidence. Additionally, the reliability of results suffers from bias related to interviewees because they were all participants in interorganizational foresight activities which can influence on their answers to favour these kinds of collaborations due to their previous involvement and interest towards the subject. (Heger & Boman 2015, 161–162).

In the whole, it is argued that more research is needed in the field of networked foresight to get more reliable and generalizable results. The “networked foresight” is still quite new and lacks empirical evidence on how exactly companies could cooperate in complex environments and find a way to share their resources and in this way achieve better foresight results. One of the concerning questions on researchers’ minds today is how inter-organisational networks can ensure participation and enhance trust among its participants. According to these articles they are the most crucial aspects leading to success but can so often be missing. (Van der Duin et al. 2014; Heger & Rohrbeck 2012). Yet it offers a better way for understanding a connection between business ecosystems and strategic foresight, and how they are related to each other.

5 RESULTS: NAVIGATING THE FUTURE; DRIVERS OF CHANGE IN BUSINESS ECOSYSTEMS

5.1 Adapting changes

“The world is entering an era in which ideas and insights come from everywhere, and crowds, clouds, collaborators, competitions, and co-creators can fundamentally help define our shared future. The business environment is being permanently altered as a result” (Kelly 2015, 10).

Business ecosystems are evolving and changing all the time which requires companies to change the nature of their business ecosystems regularly. Due to business ecosystems being prone to constant change, constant monitoring and modifying are required to be able to manage the business ecosystem. (Zahra & Nambisan, 2012, 222). It is also important to understand when it may be an appropriate time to make changes in current management practises to keep other members content with the objectives of the business ecosystem. Furthermore, keystones are expected to consider policy and cultural requirements. Especially, for a business ecosystem that operates across countries, there are several social aspects that need to be taken into consideration. For example, if a company is planning a new product, it should consider its cultural acceptance. (Rong et al. 2017, 235). Moreover, these activities require evaluating what changes may take place in social, technological and political environments and how the level of competition and collaboration may change. Sometimes cooperating with competitors is seen as a productive and reasonable choice because it contributes to gaining more information on different industry principles, and sometimes competitors decide to collaborate to overcome policy regulations. (Heikkilä & Kuivaniemi 2012, 24). In today’s world it is not enough to detect possible, probable or plausible changes. In addition to these, organizations need to be prepared for more disruptive changes as well. These changes can be characterised by words “volatile, uncertain, complex and ambiguous” (Futures Platform). Disruptive changes are called as black swans which have the same meaning as wild cards. They are characterized by being “sudden, rare, unlikely, and unexpected events with widespread impacts”. Even though the probability of these events to take place is low, it is the high impact that these changes can have, which makes them

important ones to prepare for. (Heinonen & Ruotsalainen 2018). Below a few trends are described in more detail which stood out during the theme interviews. These include increasing ecosystem-based activity, globalization and counterforces, young generations taking management positions and data as a driver.

5.2 Counterforces to increased ecosystem-based collaboration and globalization

Due to these changes in the marketplace, companies are expected to scan their business environments in a different light. This means being able to understand wider connections and “networks” that reach beyond their existing borders. Understanding this wider connection of the world helps companies build new joint networks with their partners, which help them utilize richer resources and information than before. Managers must find their path in a changing world and find suitable partners to build competences of the future. (Zahra & Nambisan 2012, 219). Additionally, Valkokari et al. (2017, 21) emphasize that the future path of ecosystems is dependent on all actors’ activities and the level of their interdependence. From this it could be assumed that no one company can manage ecosystems successfully without considering others involved and allowing them to have influence on how activities should be planned and implemented. Globalization is a megatrend that has been affecting our lives already for many years. It is influenced by multiple phenomena taking place simultaneously. One of the consequences taking place due to globalization is said to be increased dependency between organizations. This increased dependency is also known as networking where organizations are more dependent on others to succeed (Vepsäläinen, 2016). Additionally, it is argued that managers should focus on larger networks that will give them needed resources to respond to increasing competition coming outside from existing partners. (Van der Duin et al. 2014, 64). Five out of seven interview participants who were asked a question about the possibility of increasing ecosystem-based activity believed that networking will be increasing in the future. And therefore, also interorganisational collaboration will be increased. Below there are a few citations to illustrate this:

“As a network researcher, I want to believe that companies need other companies and the importance and meaning of networking will increase, but if there are companies that are omnipotent and can buy their entire operations and know-how for themselves, then I

cannot say will it divide somehow, that there will be some amount of global corporations and large amount of small companies that are strongly networked.” (7)

“Obviously, there will be more networking and more platforms if the amount of data increases at this pace and it is easier to exploit it and all the signs indicate that it will become more networked both globally and locally.” (4)

“I think that its meaning will only increase. We cannot solve everything on our own and this requires new practises... It goes more towards creating solutions together for customers and not just in a vacuum and it requires new things from management and operating methods” (6)

Globalization is closely connected to increasing competition where organizations are seeking for new, better and faster ways for accomplishing their goals. Ecosystems are built by several parties and organizations to accomplish something that they would not be able to do on their own. However, there is one aspect that is said to be changing. This seems to be an increased pace of globalization and its different forms in the future. This is reflected by a notion from Baldwin (2019, 3) who writes that future’s globalization is more about “things we do” than “things we make”. Here the essence of thought is that globalization drives the movements of intangible things across the world where people can exchange their ideas and technologies without the movement of actual physical things. Globalization brings organizations together via new instruments and this is taking place faster than before. In his article Belk (2019, 545–546) brings forth the possible influence of counterforces such as “glocalization” and the increasing effect of “localizing” that should not be left unthought in today’s organizations. The essence here is that organizations should start to be more prepared for new trends to take place, which here reflects that localization could even possibly overcome globalization. Despite that quite many of the interview participants believed that ecosystem-based activity will increase, during the interviews quite many mentioned the possible existence of counterforces. Below there are some considerations from the interview participants about their possible effect. This kind of a trend is already visible, and it can bring forth new kinds of challenges and operating models for business ecosystem management in the future. The interview participants expressed this according to the following:

“...Will globalization continue when considering current issues such as trade wars and corona viruses and sustainability issues, is it really that global patterns of cooperation will indeed continue, or will it become more regional... Will there be counteraction for globalization? This is purely a speculation.” (2)

“...whether there will be this kind of global imperialistic trend where borders are closed, and instrumental value is all that matters.” (6)

“At the same time there exist many trends that are opposite to each other.” (8)

When considering the possible impacts of these counterforces, it raises a question about the impact of a ripple effect where one situation causes a series of other situations to take place. If business ecosystems experience a threat from outside, a series of actions will follow that will affect its management and operational functions. One can only estimate so far what consequences these kinds of changes can have. Take coronavirus as an example. It raises uncertainty due to its unknown level of influence it will have on interorganizational collaborations worldwide. As it was already mentioned in the previous chapter, business ecosystem management to run smoothly requires trust and collaborative methods from its partners, and how companies will manage this in the long run represents a real challenge and seems to be an area that requires more research. Furthermore, during the interviews the discussion about the ways how these counterforces could influence the management of the business ecosystems in the next ten years remained quite limited. It could be assumed, however, that in the future this kind of a subject offers interesting research topics.

5.3 Young generations taking management positions

Organizations are said to be experiencing shifts in management in the coming years. When younger generations enter in management positions, changes are expected to emerge. These changes are related to stepping away from bureaucracy towards a more flexible organizational culture. This change in management is assumed to have contradictory approaches from executives in high positions. For example, they might be tempted to try to persuade these new generations to apply more traditional methods that

favour hierarchical mechanisms. However, since these new generations are driven by the need to evolve and learn, to have a meaning and time for themselves, those old traditional ways of managing are not seen as attractive. (Martin 2020). This new management style can impact on the overall business culture within an organization. And when organisations are working together across different fields, this new way of doing can influence the whole system. These new generation managers are said to favour more collaborative methods that are based on shared values where management is not strictly following the traditionally known “top-down” approach (Y Generation to Leading Positions). The interview participants acknowledged this trend as being an important influencer on business ecosystem management. Although this trend did not get as many arguments from the interview participants than other trends selected to represent the main trends of this thesis, it was selected due to its strong relation to future management positions. It was interesting to notice how the interview participants mentioned this during the interviews. They saw a new generation as enablers who have good communication skills and flexible attitudes that will eventually change current managerial methods. This is seen as a positive contributor to the development of ecosystem-based collaboration where organizational borders are disappearing and transparency in communication is increasing. The interview participants expressed positive views on the attitude of young generations in management positions and expressed it as follows:

“A huge opportunity arises when large age groups are leaving and a part of change resistance will draw away and more younger generations will take their positions that know how to utilize digitalization...then everything is fine, not quite that though...” (4)

“Within the next ten years almost all management positions in our related business fields will change because at the moment old generations are still in leading positions and after this one could imagine that the cooperation will become easier or at least I assume that this change will influence the nature of the cooperation.” (6)

5.4 Data as a driver

The importance of understanding the impact of digitalization in ecosystems has been emphasized in several articles (Pellikka & Ali-Vehmas 2016; Weill & Woerner 2015). This can be seen, for example, in highlighting that companies need to analyse how this

trend will affect their existing business models and how its influence should be considered at a business ecosystem level. When planning for their future, companies are encouraged to find creative solutions that increase their business performance. This is also one reason why ecosystem-based activity is playing an increasing role in today's business world. Managing in dynamic environments, requires managers to seek solutions beyond existing ones and to find partners that help them maintain their performance. Managers should consider more about digital disruption and what new things can be obtained in this new era but also be aware of its downside, which includes new types of threats. (Weill & Woerner 2015, 27–29). Weill and Woerner (2015) state that managers who can think of their networks in a wider manner, have better chances to keep on prospering. And there are two aspects highlighted that managers should consider; they should pay more attention to their customer relationships especially in ecosystem terms and know how to succeed in the digital era. (Weill & Woerner 2015).

Furthermore, it is valuable for managers to evaluate the nature and the pace of trajectory of an unknown situation for the ecosystem if possible. And especially, to determine the level of threat which may come from other business fields and may cause a disruption within the industry where they operate. This calls for constant development and evaluation in relation to their ecosystem strategy. When digitizing more of their services, companies face new challenges such as the possibility of the whole industry revolution as a result of the new digital age. (Weill & Woerner 2015, 32, 34). Several interview participants emphasized digitalization as a major driver. Four of them included representatives of different companies and they considered digitalization as a connecting element and enabler for development. Below there are a few examples on how they described the benefits of digitalization:

“Data is one raw material that people want to have access to and technology manages its secured sharing, and in that, technology is an accelerator, enabling the layer that pushes forward some business sectors.” (1)

“...and there exist trends in the background such as data and its sharing between different actors, which is now easier, there are also old procedures in use such as faxes which again complicates the coordination of activities but nowadays it is easier and cheaper to develop new solutions. Digital technology is an enabler.” (6)

Digitalization is seen as an “enabler” for new business opportunities. It offers a way to develop faster solutions. Among the interview participants a belief in the influence of digitalization is strong. Also, the downside of digitalization was acknowledged by a few of them. For example, despite its benefits, the interview participant one brings forth a problem which results in distributing the excessive amount of knowledge. According to the interview participant one it may cause a different reaction than originally desired, leading to opposition to excessive information sharing. In the whole, digitalization is seen as having a strong influence on the business ecosystem management. When discussing digitalization, a short discussion about the possible influence of the platform economy on the business ecosystem management came up. The interview participants, with whom this discussion took place, mostly believed that the number of digital platforms will increase in the future as well as their significance on how business ecosystems will be managed. It can be assumed that digital platforms will influence the business ecosystem management, but the discussion about the different ways on how it will impact on the future management strategies in business ecosystems remained rather limited in terms of these interviews. Therefore, in this thesis these aspects were decided to leave out. Despite this, their influence is good to mention here.

6 DISCUSSIONS AND CONCLUSIONS

6.1 Main results

The aim of the study was to gain insights on how business ecosystems are managed in the future. The theoretical framework followed an adaptive theory by Layder (1998) where the theory and the empirical part were combined to form a dialogue with each other. The thesis followed a qualitative research method. At the first phase, a literature review was conducted. The second phase consisted of theme interviews. There were eight interviews in total. The themes of the interviews addressed ways of managing business ecosystems, changes and requirements to be expected in 2030, the role of strategic foresight when evaluating changes in management aspects and possible challenges experienced in business ecosystems. In the empirical section, the aim was to understand those management aspects that are considered important in the business ecosystems management in the future. These were detected by reflecting on the views of the interview participants. Special attention was given to issues that should be given more attention in the future from a business perspective.

In the beginning of the thesis, the literature dealt with the definition and characteristics of business ecosystems. This was done to bring clarification on how the term is usually understood, what kinds of roles exist and what responsibilities are considered to belong to the responsibilities of the business ecosystem leader. Especially in the management field, a division into business, innovation and platform ecosystem has proved to be a very common approach towards understanding ecosystems (Shipilov & Gawer 2019, 18). The difference between these terms is still quite shallow and one of the reasons that is still making it complicated for companies to understand. These difficulties derive from understanding the terms to explicating clear reasons on why they should even be a part of some ecosystem. This is something that came up when analysing the interview results. Some of the interview participants emphasized the importance of understanding the difference between ecosystems and networks. This might also be what makes the holistic understanding about the meaning of ecosystems so difficult. It can be one reason why it is difficult to discuss ecosystems in general. Among many of the interview participants, the difficulty of understanding ecosystems in general within organizations emerged. Also, another thing that came to the surface several times during the interviews

was the fact that business ecosystems are difficult to interpret because their boundaries are so complex to define. As it can be seen from the previous literature and from the answers provided by the interview participants, business ecosystems are very complicated to understand, due to their complex nature and different ways on how the term is usually defined. Therefore, in the beginning of the research careful attention was placed on understanding and defining the term, its relation to this research context and complexity related to defining ecosystem terms in general.

Chapter three dealt with the literature on business ecosystem management and challenges. Chapters four and five dealt with strategic foresight, networked foresight and literature on drivers of change. Literature on networked foresight was chosen to illustrate how strategic foresight could be implemented at a business ecosystem level. In order to provide an answer to the main research question, there were four sub research questions that needed to be answered. Next the main findings of each of these sub questions are discussed in more detail that together will form the final analysis on the management of the business ecosystem in the future.

When considering what kinds of strategies and capabilities will be needed in the business ecosystem management, it should be noted that managing business ecosystems is different from traditional management. From leading companies, it requires an ability to manage beyond traditional company borders. One of the main things that came forth during this research is that managers need to find new ways to manage these kinds of networks. Furthermore, identifying and strengthening one's own role within a business ecosystem while at the same time taking other players more into account are considered essential. The results indicate that in the future more emphasis should be placed on the shared benefits that can be provided within a business ecosystem. The clarity of roles and rules seem to maintain their importance because these bring clarity to the function of the business ecosystem. However, alone the leader company cannot force others to follow the rules. Instead, it can manage general governance aspects, but it cannot act without the approval of others. Other issues related to shared benefits concern the careful consideration of the amount of information that can be shared between other players and considering one's own willingness to do so. One notable matter here is that the keystone as well as other players should be aware of their own limits and set clear restrictions between those resources that can be shared and those resources that are considered best to keep by themselves to ensure their own competitiveness. These form usually the

company's own core competences. In general, the industry and the size of the company are seen to influence the kind of strategy pursued in the business ecosystem.

The research brings to show that vision is considered as an important element in successful business ecosystem management. From the perspective of the keystone, it means having the ability to take things forward and achieve the business ecosystem goals and clarifying the vision. A shared vision connects members and facilitates communication within a business ecosystem. Furthermore, the research indicates that it is important to keep a balance between a company's short-term strategy and a business ecosystem strategy. The interview participants emphasize the importance of building a bridge between these two. This results that the business ecosystem vision must be linked to shorter term business operations. In this way, it prevents that vision from being just an unattached goal in the future. A clear vision is considered the crux of the successful operation of the business ecosystem in the future. Therefore, it should be articulated clearly.

The research indicates that the most important capabilities include the capability to create and maintain trust, to increase value creation between all partners within the business ecosystem and to possess dynamic capabilities. In order to capture these, it requires new way of scanning the business environment and understanding its complex nature, which here requires taking a deeper look at the company's internal structures. According to the research companies should be prepared for making more changes in their internal structures. This change is considered a precondition for enabling collaboration with players outside the traditional business borders to take place. Trust is seen as a bridge to a functional business ecosystem. And if trust is lacking, business ecosystems tend to suffer from inadequate communication and players tend to feel more uncertainty towards other players' intentions. Trust is described as a mechanism that helps create a shared vision. This research indicates that trust building plays a significant role when managing successful business ecosystems. It should however be noted that trust building is a long-term process, which requires dedication from all its members.

Creating value within an ecosystem is a subject that came forth several times during the interviews. As it is stated in the previous literature; value creation and capture are both important elements in business ecosystems (Valkokari 2015). Valkokari et al. (2017, 21) highlight that creating value collaboratively should be the essence in ecosystem thinking and companies should consider more how their actions are viewed by current and new ecosystem players. This was also acknowledged by the interview participants.

Also, in business ecosystems creating and capturing value are both elements that the keystone company must consider. This means that while it is responsible for maintaining its competitiveness, it must consider other players in that business ecosystem in a way that operating within that business ecosystem benefits them and allows those other players to get access to resources that otherwise would not be possible. This research shows that there seems to be an imbalance between business ecosystem leaders and other companies when it comes to value distribution. As a result, the value is not yet distributed as evenly as would have been desired. This is an issue that is hoped to change in the future and an aspect where desirable futures came to the surface. The interview participants understand its importance and recognize it as an integral part of future success. The way how value is divided between different partners is seen to influence how other players are experiencing the health and functionality of the business ecosystem.

According to Teece (2017) the essence of dynamic capabilities lies in creating and transforming existing business models which helps to adapt to changes better. This also relates to changes when companies need to manage business ecosystems that require different management strategies than traditional business networks. Due to the dynamic nature of business ecosystems, managing also requires ability to transform current capabilities when necessary. (Teece 2017). In the future these represent important capabilities because they enable companies to be proactive against future changes, make needed changes in time and scan future possibilities and threats. Additionally, dynamic capabilities are related to transforming a company's internal structures to better meet the goals of the business ecosystem (Teece 2017). The research shows that when internal structures of the company are well balanced with the larger-scale goals, the company has prepared itself both culturally and operationally to act and manage in a business ecosystem. This gives the company capabilities to operate, manage and acknowledge its own limits.

The results show that managing business ecosystems holds several challenges. The different nature of the business ecosystem when compared to other kinds of business environments seems to act as an obstacle for managing them well. Sharing of information seems to be difficult because companies do not feel comfortable to share information across their own company borders. Additionally, the results show that value distribution between different partners is considered still uneven. According to derived results this is probably because business ecosystems are very business driven, where companies have a strong tendency to put their own goals and profits ahead of the business ecosystem goals

and collaboration with competitors is perceived as difficult. Overall, these results show that matters perceived as important management strategies and capabilities form also an essential part of the challenges related to their management. In contrast to the previous literature, where changing of roles is described as one of the major challenges to the leading companies (Annanperä et al. 2016), in this research, this issue did not seem to be such an important question. Instead, more emphasis was placed on the challenges related to changing internal structures, managing business ecosystem relations and sharing information.

It seems that strategic foresight is not implemented enough in an interorganizational environment and more effort should be placed on collaborative foresight processes. Companies face difficulties in connecting the company's short-term goals to long-term goals that cover the operations of the business ecosystem. Therefore, plans are usually made for shorter time periods, which weakens the quality of anticipating the future. Difficulties experienced in business ecosystems seem to derive from uncertainty on gaining more trustworthy foresight results and considering how reliable business ecosystem partners consider each other. As it was stated in the literature, companies may not realize possible opportunities that could derive from "networked foresight". This can derive from too rigid mindsets which also was discussed in the literature. (Van der Duin et al. 2014, 74). This research suggests that this usually leads to a situation where partners are not willing to share their foresight possessions with others. Also, the results indicate that companies within business ecosystems are utilizing strategic foresight from a quite narrow perspective and more should be done to enable its benefits to be properly captured. Overcoming these mentioned uncertainties is a prerequisite for a successful management of a business ecosystem in the future.

Van der Duin et al. (2014) state that even though more research is needed to examine the quality of networked foresight activities, it can offer various benefits to all involved. It is expected that having multiple stakeholders in the process, also external to a company, enriches the outcomes of the foresight activity by adding new insights. (Van der Duin et al. 2014, 76). This is consistent with the results from the theme interviews. The interview participants, with whom this subject was discussed, acknowledged the benefits of implementing strategic foresight together with other business ecosystem partners. An enhanced ability to anticipate challenges emerged as one of the most essential ones. The research indicates a gap between acknowledging its significance and its actual implementation. According to the interview participants, even though companies

acknowledge the importance of it, they also state that it is still not practised enough. Furthermore, some of the interview participants expressed their preferable images by stating that the desirable future outcome would be that more cooperation between companies would take place in this area as well. The results disclose that strategic foresight has a role in planning future activities, but the time span and role differ depending on the industry. When it comes to the planning and implementation of strategic foresight processes in the future, a keystone is seen as having a role in providing support and taking these processes forward, which would enable more cooperation to take place. Understanding of one's business environment lies in the essence of well-practised foresight techniques. Strategic foresight processes seem to have a significant impact on success, but in the business ecosystem environments, their implementation has been relatively limited so far.

Vecchiato (2012) argues that uncertainty is an ultimate reason for implementing corporate foresight. This is in line with the results of this study. Since uncertainty is expected to increase, more strategic foresight is needed. Therefore, an ability to recognise changes becomes more important for business ecosystem management. Due to accelerating pace of change, faster responsiveness and the ability to adapt and cooperate are required. By combining the resources of different partners, overcoming challenges is seen more probable in the future. This can also be seen in those companies that took part in this research and described how their strategic foresight processes work and what benefits can be gained from it. This research shows that from the perspective of a leading company, transparency and ability to show by example that foresight processes can be shared with others are required. This requires an understanding that implementing strategic foresight at a business ecosystem level can generate richer solutions that are needed in today's and future's business environments. It can also contribute to understanding even those drivers of change that are hidden from the company. These could be revealed with the help of collaborative effort. Eventually this could help the business ecosystem become more resilient towards future challenges which leads to decreased uncertainty and improved ability to anticipate challenges.

During the interviews there was discussion of the influence of different trends that were considered to have an impact on business ecosystems and their management in the next ten years. Trends that emerged among most of the interview participants were selected for discussion in this research. These trends include increasing ecosystem-based activity, globalization and counterforces, young generations taking management positions

and data as a driver. The research shows that ecosystem-based activities are expected to increase in the future. Cooperation and networking between companies is expected to grow further and take on new forms such as the growth of digital services and the platform economy. Additionally, networking is expected to increase both globally and locally. The research also suggests that the impact of possible counterforces should not be underestimated. In the face of future threats, in addition to preparedness, companies need to have better understanding of the various counterforces and their possible impact on their business environment. When it comes to management positions, the research brings forth that partners of the business ecosystems will favour less hierarchical management practises. This is expected to take place when young generations are taking more management positions. Especially, a tendency towards favouring more collaborative methods by this younger generation is seen as a major influential factor in future's management aspects. Furthermore, digitalization is considered as a driver for future success and enabler for development in the long-term. It is a connecting element between business ecosystem partners. According to the research, in order to manage business ecosystems successfully in the future, companies need to prepare for changes at a faster pace by scanning emerging phenomena, also the ones described as wild cards. Understanding one's competitors and considering them as possible future partners represent new ways of collaborating. Digitalisation brings more opportunities for companies in the future. It is an enabler of development and a supportive element of the well-functioning business ecosystem.

6.2 Conclusions

The world we are living in, is constantly changing and influenced by events characterized by uncertainty. Companies need to find new models for action and scan their environment in a way that allows them to recognize the opportunities that interorganizational collaboration can offer. This research highlighted the need for acquiring capabilities that will contribute to the successful management of business ecosystems and to adopt new kinds of management strategies. Managing business ecosystems requires ability to develop current thinking patterns and to create new management models for action. Although some of these are already familiar elements, their importance is expected to increase in the future. Therefore, even more attention will be required to address them. Furthermore, when considering future challenges and changes, understanding of new

dynamics and transforming existing models becomes essential. This means understanding the wide scope of change and accepting that some activities remain difficult to anticipate but it should not remain an obstacle to finding new solutions and partnerships that are yet to be discovered. Companies are required to have the courage to enter a new world of business and the courage to lower their shields from others. However, this should be done within those limits they are prepared for and define those limits clearly. For these aspects to be accomplished, the capabilities, strategies and challenges addressed here seem to play a crucial role. When it comes to managing business ecosystems, a prerequisite for success lies in the organisation's internal structures where change is needed to enable the organization to manage business relations beyond traditional borders. This change enables external cooperation networks to function. Business ecosystems are not managed with traditional ways, it is ever changing and demands a broader understanding of the operating business environment, different organizational cultures and advancing dynamic thinking both within the company and across companies. It is based on embracing a mindset and interaction that differ from managing more traditional business environments.

Moreover, the importance of strategic foresight and its significance needs to be highlighted more. This means bringing forth the benefits that can be achieved when foresight processes are utilized at a business ecosystem level. The future environment needs to be scanned from a wider perspective, which is here illustrated as a business ecosystem perspective, where several parties are interrelated, and no one can manage without the acceptance of others involved. Drivers of change, that can cause even surprising upheavals, need to be understood more broadly. This can be achieved through focusing on a circle of constant scanning and interpreting as well as focusing on the continuous utilization and integration of knowledge and learning. Ultimately, managing business ecosystems in the future requires finding a balance between more flexible management models that favour information sharing, creating value through common vision and collaborating with companies that are currently seen as competitors, while still maintaining clear rules on matters related to clarifying roles and orchestrating across interorganizational borders and taking strategic foresight processes forward to become more resilient in the future.

6.3 Suggestions for future research

Since this research is done from a broad perspective, it offers several interesting subjects for future research. However, these are largely dependent on the types of resources available. Below there are a few suggestions for further study. These include the following:

One subject for future research is related to the role of strategic foresight and its utilization in business ecosystems. This turned out to be an interesting topic among the interview participants. This is an area of research which also according to a previous literature requires more research. This kind of a research could provide deeper insights into strategic foresight processes at the business ecosystem level. The role of strategic foresight seems to be yet quite limited at a business ecosystem level, but an area which is expected and hoped to change in the future. The research could be conducted using quite similar methods than were used in this thesis. Another way could include planning future workshops where participants could focus more on sharing their views. This could contribute their understanding to the benefits that can be gained when implementing strategic foresight at a business ecosystem level and the issues that a keystone can implement to make strategic foresight processes more fluent across business ecosystem partners.

Since the focus of this research was not on any specific business ecosystem or any field of business, it could be useful to focus the future research on a specific business ecosystem. In this way, more specific results could be derived on matters such as, how an organizational culture could be changed internally towards a direction where business ecosystem activity and management would become more natural in the future. This could provide an opportunity to get more familiar with a specific business ecosystem better. It should be noted, however, that if the subject of the study is the entire business ecosystem from an individual business industry perspective, then the required resources are quite extensive because it encompasses a wide research area.

6.4 Validity of the research

Validity aspects form an essential part in evaluating the quality and credibility of the research. Validity is related to evaluating the coherence of the research, its logical structure, the suitability of the utilized research methods and consistency of the research

findings. Therefore, the suitability and quality of the chosen research methods need to be explained. Also, reasons behind the chosen methods and the chosen participants need to be clarified. The researcher also needs to consider the consistency of the research questions and objectives (Saunders & Lewis 2012, 125–127). Furthermore, discussions need to be relevant and reflect the research questions. (Fisher 2010, 272). When these aspects are taken into consideration the quality and reliability of the research is enhanced.

To improve the validity of this research, all phases in the empirical part are described in detail. More specifically, transcripts were read carefully through several times to ensure that the formation of the themes would be as valid as possible. The Futures Platform radar and the interview material are included in the appendix to make it easier for the reader to understand and follow how this research was conducted. The analysis and thematizing follows the guidelines of Hirsjärvi and Hurme (2001). In this way, the researcher can provide more reliable research findings. A qualitative study is always subjective, and it relies on researcher's own interpretations and analytical skills. Since subjectivity is always present in qualitative research, in the analysis phase the researcher makes choices and formulates themes based on the researcher's own interpretation on the most relevant content (Hirsjärvi & Hurme 2001, 145–146). The interpretation of the research is always influenced by the researcher and participants, as well as, those individuals who read the research. Since the same interviews can be interpreted in different ways, the central idea here is to get the reader to adopt the same viewpoint as the researcher. This helps the reader to find the same themes regardless whether the reader agrees with the researcher. (Hirsjärvi & Hurme 2001, 151). If this research would be repeated by another researcher, the results would probably differ to some extent. Therefore, it is essential to explain the research process carefully and explicate the reasons behind the chosen research strategy. In this research the selection of the interview participants was made together with the commission company to ensure that they have the needed expertise and knowledge on the subject. The citations of the interview participants have been kept as similar as possible when translated into English to prevent possible misunderstandings. However, there is one limitation regarding the number of the interview participants. There is a possibility that the results would have been divided differently if more interview participants would have been included in the interview. This could have influenced the chosen themes discussed in this thesis. Each of the sub research questions are discussed separately at the end of this thesis and emphasis is put on the most essential findings. Together these sub questions formulate a cohesive analysis that answers the main research

question. This thesis follows a dialogue between the theory and the empirical part. In this way, the compatibility of the theory and the empirical part is explained better.

In a qualitative research “external validity” is related to how transferable the research results are to other contexts. (Fisher 2010, 274). Auerbach and Silverstein (2003, 86) state that “transferability” in a qualitative study reflects a researcher’s ability to consider how the research could be advanced and what kinds of studies could be conducted in the future based on that research. This means considering conducting studies that will enhance understanding about the subject. This research offers interesting topics that could be utilized in later research. By focussing the next research on some of the sub questions of this study in more detail, deeper insights could be revealed regarding the chosen subject area. These were discussed more in suggestions for future research section. Additionally, there are several ways to enhance validity. One way is to utilize external resources when evaluating one’s research. This means participating others into analysis and interpretation phases. This allows the researcher to analyse the whole research from a broader perspective. (Fisher 2010, 276–277). To improve validity, some of the citations and their contexts in this study were sent to a couple of the interview participants for commenting. Additionally, themes, formulated in the initial stage of the analysis, were presented to one of the thesis supervisors who acted as a representative of the commission company and who also participated in the interviews.

6.5 Limitations of the research

Some limitations exist when considering the depth of the research, the research methods and the analysis and interpretation phases. This research took a quite wide research perspective; therefore, it is possible that it acted as a restricting factor in receiving such in-depth responses to all the sub research questions. This limitation derives partly from the problem that there was only a limited time to discuss some of the themes. Additionally, all the interview participants did not have time to read the pre-material through as well as it was originally thought. And though, the interviews revealed a variety of trends that were discussed during the interviews, the deeper insights on the requirements regarding management issues were partially missed. More could have been invested in this, but as the research was so extensive and the interview time limited, some responses remained superficial.

There exist a few reasons why the whole interview material was not dealt by all the interview participants. The interview material was modified between the interviews. This is one of the characteristics of a qualitative study, especially, when the subject is complex, and the researcher does not know beforehand what kinds of answers will be gained from interviews (Fisher 2010, 183). Sometimes the interview participants were so excited to discuss certain contexts which resulted in limited time to go through some of the interview themes so well. But these were also those situations where some of the most insightful insights emerged. Therefore, the intention was never to interrupt them simply to get answers to missing questions. Moreover, this was a matter already identified by the researcher before the interviews took place. With a few of the interview participants, a short discussion took place regarding the layout of the Futures Platform radar. It concerned a possibility that the radar consisted of too many phenomena. This might have caused confusion among the interview participants. Therefore, it may have needed more clarification. This could have been achieved by reducing the total number of trends presented in the radar. This was also a concern that the researcher had considered in the beginning. However, this was chosen not to be done because it was considered important that the research would not limit the interviewees to a certain paradigm. The aim was to get them thinking about the future from a broad perspective. Additionally, when considering the quality of the conducted interviews and their analysis, a few issues exist that may limit the validity of the research. In a qualitative study the quality of analysis and interpretation depends on the researcher. Therefore, there is always a possibility that some of the research results and the answers of the interview participants are misinterpreted, because subjectivity is always present in qualitative research methods which influences on how results are analysed and interpreted.

REFERENCES

- Aarikka-Stenroos, Leena – Ritala, Paavo (2017) Network management in the era of ecosystems: Systematic review and management framework. *Industrial Marketing Management*, Vol. 67, 23–36.
- About Futures Platform. (2019) Futures Platform. <<https://info.futuresplatform.com/hub/about-futures-platform>>,retrieved 20.4.2020.
- Adner, Ron (2017) Ecosystem as Structure: An Actionable Construct for Strategy. *Journal of Management*, Vol. 43, 39–58.
- Annanperä, Elina – Liukkunen, Kari – Markkula, Jouni (2016) Managing a Business Ecosystem in the piloting of a technology-based health-exercise service. *Journal of Information Technology Management*, Vol. 27 (3), 93–112.
- Armstrong, Mike – Engelbrecht, Will – Kelly, Eamonn (2015) *The new calculus of corporate portfolios*, Business ecosystems come of age, Deloitte University Press, <https://www2.deloitte.com/content/dam/insights/us/articles/platform-strategy-new-level-business-trends/DUP_1048-Business-ecosystems-come-of-age_MASTER_FINAL.pdf>, retrieved 30.9.2019.
- Auerbach, Carl – Silverstein, Loise B. (2003) *Qualitative Data: An Introduction to Coding and Analysis*, New York University Press, New York.
- Baldwin, Richard (2019) EAEA16 Keynote Address: The Future of Globalization. *Asian Economic Journal*, Vol. 33 No. 1, 3–12.
- Baldwin, Carliss Y. (2012) Organization Design for Business Ecosystems Special Issue on The Future of Organization Design, *Journal of Organization Design 1*, Vol. 1 1–4.

- Battistella, Cinzia – De Toni, Alberto (2012) Exploring the organizational design for resilience and foresight. *The International Society for Professional Innovation Management (ISPIM)*, 1–28.
- Bell, Wendell, (1997) *Foundations of Futures Studies: human science for a new era. Vol. 1, History, purposes and knowledge*, Transaction Publishers, New Brunswick.
- Belk, Russel (2019) The future of globalization: a comment. *International Marketing Review*, Vol. 36 (4), 545–547.
- Bruun-Jensen, Jacob – Hagel, John (2015), *Minimum viable transformation*, Business ecosystems come of age. Deloitte University Press.
 <https://www2.deloitte.com/content/dam/insights/us/articles/platform-strategy-new-level-business-trends/DUP_1048-Business-ecosystems-come-of-age_MASTER_FINAL.pdf>, retrieved 30.9.2019.
- Craca, Paula – Camarinha-Matos, Luís M. (2017) Performance indicators for collaborative business ecosystems — Literature review and trends. *Technological Forecasting and Social Change*, Vol. 116, 237– 255.
- Drews, Paul – Schirmer, Ingrid (2014) From Enterprise Architecture to Business Ecosystem Architecture: Stages and Challenges for Extending Architectures beyond Organizational Boundaries, *IEEE 18th International Enterprise Distributed Object Computing Conference Workshops and Demonstrations*, 13–22.
- Daft Richard L. – Weick, Karl E. (1984) Toward a Model of Organizations as Interpretation Systems. *Academy of Management Review*, Vol. 9 (2), 284–295.
- Fisher, Colin (2010) *Researching and Writing a Dissertation: An essential guide for business students* (3rd ed) Pearson Education Limited, England.
- Gupta, Ranjit – Kumiko, Miyazaki – Yuya, Kajikawa (2018) Ingredients of Successful Emerging Business Ecosystems: Case of Industrial IoT Adoption. *Portland*

International Conference on Management of Engineering and Technology (PICMET), 1–6.

Heger, Tobias – Rohrbeck, René (2012) Strategic foresight for collaborative exploration of new business fields. *Technological Forecasting and Social Change*, Vol. 79 (5), 819–831.

Heger, Tobias – Boman, Magnus (2015) Networked foresight—The case of EIT ICT Labs. *Technological Forecasting and Social Change*, Vol. 101, 147–164.

Heinonen, Sirkka – Ruotsalainen, Juho Anticipation and Interpretation of Black Swans As A Learning Process – The Lessons of a Volcanic Ash Cloud. Lecture study material fall 2018. Turku School of Economics.

Heikkilä, Marikka – Kuivaniemi, Leni (2012) Ecosystem Under Construction: An Action Research Study on Entrepreneurship in a Business Ecosystem. *Technology Innovation Management Review*, Vol. 2 (6), 18–24.

Helfat, Constance E. – Raubitschek, Ruth S. (2018) Dynamic and integrative capabilities for profiting from innovation in digital platform-based ecosystems. *Research Policy*, Vol. 47, 1391– 1399.

Hirsjärvi, Sirkka – Hurme, Helena (2001) *Tutkimushaastattelu: Teemahaastattelun teoria ja käytäntö*. Yliopistopaino, Helsinki.

Iansiti, Marco – Levien, Roy (2004) *The Keystone Advantage: What the New Dynamics of Business Ecosystems Mean for Strategy, Innovation and Sustainability*. Harvard Business School Press, Boston, Massachusetts.

Järvi, Kati – Kortelainen, Samuli (2017) Taking stock of empirical research on business ecosystems: a literature review. *Int. J. Business and Systems Research*, Vol. 11 (3), 215–228.

- Kelly, Eamonn (2015) *Business ecosystems come of age*. Business ecosystems come of age. Deloitte University Press.
 <https://www2.deloitte.com/content/dam/insights/us/articles/platform-strategy-new-level-business-trends/DUP_1048-Business-ecosystems-come-of-age_MASTER_FINAL.pdf>, retrieved 30.9.2019.
- Ketonen-Oksi, Sanna – Valkokari, Katri (2019) Innovation Ecosystems as Structures for Value Co-Creation. *Technology Innovation Management Review; Ottawa*, Vol. 9 (2), 25–35.
- Kuntola, Sami – Ylimäki, Juho (eds.) (2017) *Structuring Networks In 'Glocal' Distribution. SOP-Metal learning international R&D collaboration*. Dimecc Rebus – Towards Relational Business Practises. Dimecc Publications Series No. 14.<<https://www.teknologiainfo.net/sites/teknologiainfo.net/files/download/DIMECC%20REBUS%20ebook.pdf>>, retrieved 6.3.2020.
- Layder, Derek (1998) *Sociological Practice*. Sage Publications Ltd, London.
- Lehtonen, Joni (2017) *Re-Configuring Ecosystems. Defining ecosystem-level value co-creation strategies – viewpoints of IT service supplier Tieto*. Dimecc Rebus – Towards Relational Business Practises. Dimecc Publications Series No. 14. <<https://www.teknologiainfo.net/sites/teknologiainfo.net/files/download/DIMECC%20REBUS%20ebook.pdf>>, retrieved 6.3.2020.
- Malaska, Pentti (2000) Knowledge and information in futurology. *Foresight*, Vol. 2 (2), 237–244.
- Martin, Paula (2020) Why Millen-nials Get Collaborative Leadership (and You Should, Too) 4.3.2020 <<https://www.business.com/articles/millennials-collaborative-leadership/>>, retrieved 25.3.2020.
- Masini, Eleonora Barbieri (1993) *Why Futures Studies?* Grey Seal, London.

- Moore, James F. (1996) *The Death of The Competition: Leadership and Strategy in the Age of Business Ecosystems*. John Wiley and Sons Ltd, Chichester, England.
- Mäenpää, Sari – Suominen, Anu – Breite, Rainer (2017) *Re-Configuring Ecosystems Rolls-Royce strives for a collaborative industrial ecosystem*. Dimecc Rebus – Towards Relational Business Practises. Dimecc Publications Series No. 14 <<https://www.teknologiainfo.net/sites/teknologiainfo.net/files/download/DIMECC%20REBUS%20ebook.pdf>>, retrieved 6.3.2020.
- Möller, Kristian – Halinen Aino (2017) Managing business and innovation networks— From strategic nets to business fields and ecosystems. *Industrial Marketing Management*, Vol. 67, 5–22.
- Nemeth, Bence – Dew, Nicholas – Augier, Mie (2018) Understanding some pitfalls in the strategic foresight processes: The case of the Hungarian Ministry of Defense. *Futures*, Vol. 101, 92–102.
- Planko, Jarkko – Ali-Vehmas, Timo (2016) Managing Innovation Ecosystems to Create and Capture Value in ICT Industries. *Technology Innovation Management Review*, Vol. 6 (10), 17–24.
- Petrick, Irene J. – Martinelli, Russ (2012) Driving Disruptive Innovation: Problem Finding and Strategy Setting in an Uncertain World. *Research Technology Management; Arlington*, Vol. 55 (6), 49–57.
- Planko, Julia – Chappin, Maryse M.H., - Cramer, Jacqueline M. – Hekkert, Marko P. (2017) Managing strategic system-building networks in emerging business fields: A case study of the Dutch smart grid sector. *Industrial marketing Management*, Vol. 67, 37-51.
- Porter, Terry B. 2006 Coevolution as a research framework for organizations and the natural environment. *Organization and Environment*, Vol. 19, 1–26.

- Rohrbeck, René (2011) *Corporate Foresight: Towards a Maturity Model for the Future Orientation of a Firm*. Heidelberg, Physica.
- Rohrbeck, René (2012) Exploring value creation from corporate-foresight activities. *Futures*, Vol. 44 (5), 440–452.
- Rohrbeck, René – Bade, Manuel (2012) Environmental scanning, futures research, strategic foresight and organizational future orientation: a review, integration, and future research directions. *The International Society for Professional Innovation Management (ISPIM)*, 1–14.
- Rohrbeck, Rene – Schwarz, Jan Oliver (2013) The value contribution of strategic foresight: Insights from an empirical study of large European companies. *Technological Forecasting and Social Change*, Vol. 80 (8), 1593–1606.
- Rohrbeck, Rene – Battistella, Cinzia – Huizingh, Eelko (2015) Corporate foresight: An emerging field with a rich tradition. *Technological Forecasting and Social Change*, Vol. 101, 1–9.
- Rohrbeck, René – Kum, Menes Etingue (2018) Corporate foresight and its impact on firm performance: A longitudinal analysis. *Technological Forecasting and Social Change*, Vol. 129, 105–116.
- Rong, Ke – Shi, Yongjiang – Shan, Tianjiao – Chen, Yantai – Hao, Han (2017) Organizing business ecosystems in emerging electric vehicle industry: Structure, mechanism, and integrated configuration. *Energy Policy*, Vol.107, 234–247.
- Ruff, Frank (2015) The advanced role of corporate foresight in innovation and strategic management — Reflections on practical experiences from the automotive industry. *Technological Forecasting and Social Change*, Vol. 101, 37–48.
- Saunders, Mark – Lewis, Philip (2012) *Doing research in business and management: An Essential Guide to Planning Your Project*. Pearson Education Limited, England

- Scaringella, Laurent – Radziwon, Agnieszka (2018) Innovation, entrepreneurial, knowledge, and business ecosystems: Old wine in new bottles?. *Technological Forecasting and Social Change*, Vol. 136, 59–87.
- Seppänen, Marko – Dedehayir, Ozgur – Still, Kaisa – Valkokari, Katri – Suominen, Arho (2015) Platform Competences to Enhance Network Effects in Business Ecosystems. ISPIIM Innovation Symposium, 1–6.
- Shipilov Andrew – Gawer Annabelle (2019) Integrating Research on Inter-Organizational Networks and Ecosystems. *Academy of Management Annals*, 1–71.
- Talent Vectia, Meistä Talent Vectia, Palvelut Talent Vectia
<<https://www.talentvectia.com/meista/>>,<<https://www.talentvectia.com/palvelut/>>,
retrieved 12.3.2020.
- Teece, David J. (2007) Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, Vol. 28 (13), 1319–1350.
- Teece, David J. (2017) *Dynamic Capabilities and (Digital) Platform Lifecycles*. *Advances in Strategic Management*, Emerald Publishing Limited, part of the book, Vol 37, 1–24, a manuscript of a chapter that appeared in pp. 211-225 of Entrepreneurship, Innovation, and Platforms (Advances in Strategic Management, vol.37) J.Furman, A. Gawer, B. Silverman, and S, Stern.
- Valkokari, Katri (2015) Business, Innovation, and Knowledge Ecosystems: How They Differ and How to Survive and Thrive within Them. *Technology Innovation Management Review*, Vol. 5 (8), 17–24.
- Valkokari, Katri – Seppänen, Marko – Mäntylä, Maria – Jylhä-Ollila, Simo (2017) Orchestrating Innovation Ecosystems: A Qualitative Analysis of Ecosystem Positioning Strategies. *Journal of Technology Innovation management Review*, Vol. 7 (3), 12–24.

- Van der Duin, Patrick – Heger, Tobias – Schlesinger, Maximilian D. (2014) Toward networked foresight? Exploring the use of futures research in innovation networks. *Futures*, Vol. 59, 62–78.
- Vecchiato, Riccardo – Roveda, Claudio (2010) Strategic foresight in corporate organizations: Handling the effect and response uncertainty of technology and social drivers of change. *Technological Forecasting and Social Change*, Vol. 77 (9), 1527–1539.
- Vecchiato, Riccardo (2012) Environmental uncertainty, foresight and strategic decision making: An integrated study. *Technological Forecasting and Social Change*, Vol. 79 (3), 436–447.
- Vecchiato, Riccardo (2015) Creating value through foresight: First mover advantages and strategic agility. *Technological Forecasting and Social Change*, Vol. 101, 25–36.
- Vepsäläinen, Jukka (2016) Tulevaisuuden muutosvoimia: Signaaleja, trendejä ja megatrendejä. Opetushallitus, Ennakointi ja strateginen kehittäminen 29.9.2016 <<https://osallistu-fi-bin.directo.fi/@Bin/9ae2a04233649aa1573258c841327d5c/1587141494/application/pdf/1187486/ESITYS,%20Tulevaisuuden%20muutosvoimat,%20Jukka%20Veps%c3%a4l%c3%a4inen,%2029-09-2016.pdf>>, retrieved 3.10.2019.
- VUCA. edited 31.7.2020 Futures Platform, <<https://go2.futuresplatform.com/phenomena>>, retrieved 1.10.2020.
- Weber, Michael L. – Hine, Michael J. (2015) Who Inhabits a Business Ecosystem? The Technospecies as a Unifying Concept. *Technology Innovation Management Review*, Vol. 5 (5), 31–44.
- Weill, Peter. – Woerner, Stephanie L. (2015) Thriving in an increasingly digital ecosystem. *MIT Sloan Management Review*, Vol. 56 (4), 26–34.

Y Generation to Leading Positions. edited 11.02.2020 Futures Platform,
<https://go2.futuresplatform.com/radar?node=88962&ret_id=09941dc3-2cd5-4053-b3d5-977c1df4de2b>, retrieved 17.2.2020.

Zahra, Shaker A. – Nambisan, Satish (2012) Entrepreneurship and strategic thinking in business ecosystems, *Business Horizons* Vol. 55 (3), 219–229.

Appendix 2. Interview format

Näkemyksesi strategisen ennakkoinnin roolista arvioitaessa muutoksia tavoissa johtaa liiketoimintaekosysteemejä vuonna 2025-2030

Eli kun arvioidaan muutoksia liiketoimintaekosysteemien johtamisessa niin mitkä ovat ne ilmiöt ja trendit, joilla uskot olevan eniten vaikutusta tulevaisuuden liiketoimintaympäristöjen kehittymiselle? Ja millaisia muutoksia arvioit niillä olevan liiketoimintaa ohjaavien ajattelu-, ja toimintamallien kehittymiselle? Onko samankaltaisuuksia/ voimistuvia ilmiöitä? + perustelut niihin (yleisesti ottaen tärkeitä / omalla toimialalla tärkeitä jne.

Missä määrin arvioit yritystoiminnan olevan nykyistä verkostoituneempaa vuonna 2030 ja miten näihin muutoksiin tulisi yritysjohdossa varautua? Millaisia verkostot ovat ja mikä on niiden suurin hyöty? Kuinka generisiä muutokset ovat? Kuinka paljon ne riippuvat yritysten strategisista valinnoista ja/tai tavoitteista?

Millainen on arviosi strategisen ennakkoinnin hyödyistä verkostomaisemman yritystoiminnan kehittämisessä? tai miten strategista ennakkointia hyödynnetään ekosysteemeissä/tulisi hyödyntää? Osaavatko yritykset ennakoida muutosta riittävällä tasolla? (Miksi? Miksi ei? Mistä se johtuu?)

Arviosi liiketoimintaekosysteemien johtamisen tavoista ja vaatimuksista vuonna 2025-2030

Mitkä ovat keskeisimmät erot johdettaessa liiketoimintaekosysteemejä, mikäli a) yritys toimii jonkin laajemman ekosysteemin ajurina ja b) yritys toimii ekosysteemisesti, mutta sillä ei ole niissä keskeistä roolia?

Millaiseksi arvioit verkostomaisen toiminnan suurimmat haasteet ja mahdollisuudet (yksittäisten yritystenjohtamien liiketoimintaekosysteemien/veturien) näkökulmasta? Entä miten arvioit yritysten johtamismallien muuttuvan ekosysteemisen arvonluonnin kehittyessä?

Millaisia toimintamalleja ja osaamistarpeita ekosysteeminen toiminta edellyttää yksittäisiltä/johtavalta/johtavassa asemassa olevilta yrityksiltä v2025-2030 (miten johtava yritys voi pitää asemansa)? Mikä on arviosi, vaaditaanko työyhteisöiltä, työntekijöiltä ja johtajilta itseltään esimerkiksi asenteellisia ja /tai uudenlaiseen ajattelutapaan nojautuvia muutoksia? Tai miten vaikkapa tekoälyä voidaan hyödyntää verkostomaisen toiminnan ja sen johtamisen tukena? Miten näet arvoluonnin ekosysteemisessä toiminnassa?

Missä määrin arvioit yritysten panostavan tarvittavien toimintamallien ja osaamistarpeiden kehittämiseen jo nyt?

Miksi ekosysteemiyhteistyöt ovat epäonnistuneet?

Appendix 3. Description of interview participants

The chosen interview participants have previous knowledge on ecosystems. Company representatives belong to the management of the company and have experience in working in ecosystems. The theme interview also included interview participants who are specialists in ecosystems, marketing and strategy. They are acknowledged researchers and professors. Several of the interview participants have many years of experience working in different ecosystem environments in different business fields. Some of them have taken part in developing and building ecosystems. Additionally, a few of them have conducted research on different kinds of ecosystems and have strong experience and knowledge in the field of strategy and management. In this research a full anonymity was promised to all involved participants. Therefore, only a general description of their knowledge and expertise can be given to the public without including any specific titles of the interview participants.